BRITISH MEDICAL JOURNAL

LONDON SATURDAY JUNE 19 1948

THE LYMPHATIC CONNEXIONS OF THE SUBARACHNOID SPACE

AN EXPERIMENTAL STUDY OF THE DISPERSION OF PARTICULATE MATTER IN THE CEREBROSPINAL FLUID, WITH SPECIAL REFERENCE TO THE PATHOGENESIS OF POLIOMYELITIS

BY

E. J. FIELD, M.D., M.S.

AND

J. B. BRIERLEY,* M.B., Ch.B.

(*From the Department of Anatomy, University of Bristol*)

There have been suggestions current in the literature from time to time that infective agents (and in particular the virus of poliomyelitis) may extend to the central nervous system along certain ill-defined lymphatic pathways. Yoffey and Drinker (1939) introduced the concept of a combined lymphatic and haematogenous spread, depending on lymphatic absorption from the nasopharynx, and dissemination through the blood stream with the lymphocyte as a virus carrier. However, their experiments were not successful in establishing this mode of spread for poliomyelitis, though it appeared to hold good for the virus of vaccinia (Yoffey and Sullivan, 1939). It is, however, with the elucidation of direct anatomical pathways, particularly those between the spinal subarachnoid space and the abdominal lymphatic system, that the present communication is largely concerned. In the course of this investigation the potentialities of dispersion of fine particulate matter introduced into the cerebrospinal fluid have been observed, and would seem to be not without bearing on the problem of the pathogenesis of poliomyelitis. The principal features of the circulation of the cerebrospinal fluid, as elucidated by the labours of Weed and his co-workers from 1914 onwards, are well known and have been widely accepted. Weed's concept of the formation of the fluid by the choroid plexuses has been broadened to include cortical and spinal blood vessels as formative agencies (Schaltenbrand and Putnam, 1927), and there is now evidence also that a not inconsiderable resorption of fluid takes place into the lymphatic system, not only in the cervical region but also in the lumbosacral zone (Brierley and Field, 1948).

A detailed review of the literature of this problem has been given elsewhere, and only the salient features can be considered here. Schwalbe (1869) and Quincke (1872) both reported the deposition of particulate matter (of unspecified size) in the prevertebral lymph nodes following subarachnoid introduction. The former, moreover, noted in his experiments with dead rabbits that Berlin-blue granules could also pass out from the subarachnoid space extension along the sheath of the optic nerve close behind the eyeball, spread in the episcleral (Tenon's) space, and even pass in along the perivascular spaces of the venae vorticosae to reach the perichoroidal space. Schwalbe was able to demonstrate an excellent filling of lymphatic plexuses in the nasal mucosa from the cranial subarachnoid space, though Quincke (like Weed many years later) was unable to confirm this. These contradictory results were no doubt due to the difference in size of particles employed, for fine particles (0.5 μ) certainly pass with ease from the subarachnoid space into the nasal mucosa. Much of the earlier work on the subarachnoid lymphatic connexions is invalid because of the high injection pressures used, often resulting in obvious tissue damage (cf. Spina, 1900, 1901).

Weed (1914), working with a true solution (iron ammonium citrate and potassium ferrocyanide) as indicator, showed that a small proportion of the cerebrospinal fluid passes into the cervical lymphatic system via the nose, though he did not believe that particulate matter could take this course. He suggested that a similar outflow to the lymphatic system might take place from the spinal subarachnoid space. For this latter suggestion, however, he proffered no experimental evidence, and indeed the technique he used precluded investigation of such an outflow in the lumbosacral region—the very region where it will be shown below to be most marked.

The problem of the spinal subarachnoid connexions was investigated once more by Iwanow (1928), who worked both with living and with dead dogs. He showed that indian ink could make its way from the spinal subarachnoid space to the aortic lymph nodes, but was unable to outline the pathways completely.

Experimental Methods and Results

The animal used was the rabbit, and all experiments were carried out in the living. Under "nembutal" anaesthesia sterile indian ink was introduced into the cranial subarachnoid space or lateral ventricle, precautions being taken to prevent backflow to the surface along the track of the needle. In all cases the amount of indian ink introduced was less than the volume of cerebrospinal fluid withdrawn as a preliminary, and the pressure under which the ink was allowed to run in never exceeded 120 mm. of ink. In order to introduce as large a quantity of ink as possible, more than one instillation was carried out in several animals. In this way it was possible to introduce as much as 4.5 ml. into one animal as opposed to the 0.8 to 1.2 ml. at the single sitting. With this technique there could be no question of any sudden increase in intracranial pressure as a result of the introduction, and conditions within the cranium remained relatively undisturbed. The ink used was

*Holder of a British Medical Association Research Scholarship.

made by rubbing down a stick of solid indian ink in physiological saline and filtering the suspension through a No. 5 Whatman filter paper. The size of the particles in the resulting preparation ranged from 0.4 to 1.5 μ, but 90% were about 0.5 μ.

The animals recovered from operation in two to two and a half hours and showed no disturbances whatsoever. They were sacrificed at intervals ranging from one to 96 hours after operation. Details of experimental technique have been described elsewhere (Brierley and Field, 1948).

Laminectomy showed that ink reached the caudal end of the spinal arachnoid sac in some seven to nine hours. Where relatively large amounts had been introduced and the animal was allowed to survive for an adequate period the extreme caudal segment was often jet-black. Around the dorsal-root ganglia of the lumbosacral region there were conspicuous accumulations of ink which produced the appearance of two columns of black beads in relation to the faintly grey cord. In the cervical region these cuffs of ink around the dorsal-root ganglia were also present, but were not nearly so well marked. In both places ink was also present in relation to the anterior nerve roots. The epidural pads of fat in the lumbosacral region were grey in colour owing to the presence of free indian-ink particles in their interstices (Fig. 1A g). Microscopical

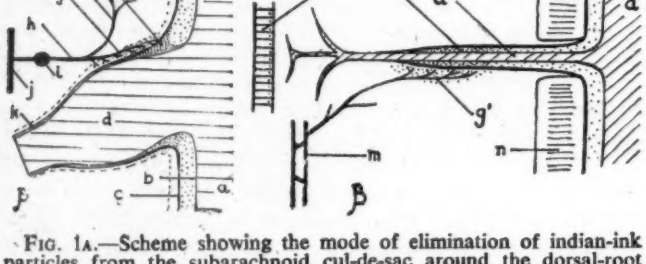


FIG. 1A.—Scheme showing the mode of elimination of indian-ink particles from the subarachnoid cul-de-sac around the dorsal-root ganglion of a spinal nerve. FIG. 1B.—Scheme showing mode of elimination of indian-ink particles from the subarachnoid extensions along the olfactory nerves. Note that in both cases ink particles are eliminated from the subarachnoid space into interstitial tissue and pass secondarily into the lymphatic system. a. Spinal cord. a.[1] Olfactory bulb. b. Pia. c. Fused dura and arachnoid. d. Spinal nerve root. d[1]. Olfactory nerve. e. Accumulation of indian ink in subarachnoid cul-de-sac. f. Lymphatic draining spinal muscles. g. Lymphatic in epidural fat. g[1]. Lymphatic arising in interstitial tissue of nasal mucosa. h. "Segmental" collecting trunk. i. Prevertebral lymph node. j. Longitudinal abdominal lymphatic. k. Epidural connective tissue. l. Nasal mucous membrane. m. Submucous lymphatic plexus. n. Cribiform plate.

examination of the dorsal-root-ganglion region showed that here ink particles were passing through the covering membranes and coming to lie freely on the surface or passing into the superjacent epidural fat. Whilst many particles were intracellular, many on the other hand were free.

Examination of the abdomen showed that the lymph nodes in relation to the spinal column, particularly those around the aortic bifurcation and in the hollow of the sacrum, were filled with ink in degrees varying from pale grey to jet-black. Tiny scattered lymph nodules behind the aorta and inferior vena cava were also filled with ink, and in some favourable cases it was possible to make out under the binocular dissecting microscope fine black lines passing backwards towards the spine. Similar small scattered nodules were also found in a corresponding position in the thorax, though only after good filling of the subarachnoid space. In all cases the cervical lymph nodes, both superficial and deep, contained indian ink. In order to determine more fully the channels by which cervical filling took place, indian ink was introduced continuously into the subarachnoid space through a cannula carefully inserted in the lumbar region after laminectomy in the fresh cadaver. In this way under controlled pressure several millilitres of ink could be introduced. Subsequent dissection showed that the ink-bearing afferent vessels of the cervical nodes originate largely from the mucous membrane of the nose. A certain number, however, were found to emerge from the jugular foramen and enter the upper pole of the highest deep cervical node—a fact noted already by Schwalbe in 1869. As will appear later such vessels deserve consideration in any discussion of possible modes of invasion of the nervous system by an infective agent.

Nasal Outflow.—Histological examination of the whole decalcified nose region showed that ink passed down the sheaths of the olfactory nerves to reach the connective tissue stroma and lymphatic plexus of the nasal mucosa (Fig. 1B). Ink was also present in the endoneurial septa of the nerve filaments. These findings are quite analogous to those of Faber (1938).

Orbital Outflow.—Enucleation of the eyeball revealed the anticipated accumulation of ink in the subarachnoid sleeve of the optic nerve. In addition, however, a diffuse greyness of the retrobulbar fat in the vicinity of the nerve was apparent. In order to obviate difficulties arising from the normal occurrence of pigment in this region a series of experiments were undertaken in pure albino animals. Histological examination showed ink particles making their way through the optic-nerve sheath immediately behind the eyeball, spreading out in the episcleral space and extending between the fibres of the retractor bulbi muscle. Details of these findings will be published elsewhere.

Passage into the Brain Substance.—In those cases in which ink was instilled directly into the ventricle subsequent examination revealed particles in the depths of the brain substance. Some ependymal cells were seen to be finely stippled with very small granules, and these were also to be found at some depth from the ventricle. Many of these deeper particles had been ingested by phagocytic elements, especially if the animal had been allowed to survive for some time. Some evidence was also found to suggest that ink-laden ependymal cells might become detached and move into the subjacent nervous substance. Such passage of indian ink occurred particularly at the inner "angle" of the lateral ventricle as seen in coronal section. To a smaller extent ink particles were also found to have penetrated the wall of the third ventricle. Unfortunately the fourth ventricle was not examined, but there is evidence in the literature that this is a site at which penetration of particulate matter from the cerebrospinal fluid may take place with relative ease (Hurst, 1930; Hamperl and Heller, 1934).

Discussion

The interpretation of the microscopical appearances in the nerve-root region presents some difficulty and has been discussed fully elsewhere (Brierley and Field, 1948). Briefly it may be stated that transport by phagocytes cannot account entirely for the passage of ink out of the subarachnoid space, a process which must be, in part at least, a passive one dependent upon an actual outflow of cerebrospinal fluid. The arachnoid culs-de-sac around the nerve roots may thus be looked upon as definite points of exit of cerebrospinal fluid into the lymphatic system and the prevertebral nodes regarded as the regional nodes of the spinal subarachnoid space.

The rapidity with which indian ink introduced into the cranial division of the subarachnoid space makes its way down to the lumbosacral region is striking. It would seem that particulate matter introduced into any region of the subarachnoid space accumulates in relation to the lumbosacral root ganglia (and to a lesser extent also the cervical) within some six to twelve hours. In the cranial region the most important outflow to the lymphatic system is along the sheaths of the olfactory filaments, though outflow also takes place by lymphatics which emerge through the jugular foramen and possibly also through other nerve foramina. In the spinal region outflow occurs along lymphatic vessels which arise in relation to the dorsal-root ganglia, more especially in the lumbosacral and cervical regions. By the mechanisms indicated the subarachnoid space may be largely cleared of fine particulate matter within some 24 hours or so of introduction. Of course, a certain amount of foreign material is taken up by arachnoid cells which may become phagocytic (Goldmann, 1913; Woollard, 1924), but this process is not under consideration here. In some

cases, in addition, fixation by the nervous tissues themselves may play a part in clearing the cerebrospinal fluid.

It is of interest to see how far the results outlined above may facilitate the interpretation of the clinical and experimental findings in poliomyelitis. Furthermore, the possibility of retrograde spread from the periphery to the central nervous system along a lymphatic pathway has been shown to rest on a definite anatomical basis. The experimental accomplishment of such spread by indian-ink particles will be described below.

Two aspects of the poliomyelitis problem may be considered: (1) How far are these findings consonant with the belief that the virus is spread by the cerebrospinal fluid? (2) What pathways are available as channels of access to the cerebrospinal fluid in the first place?

Presence of Virus in the Cerebrospinal Fluid

There are many reports in the literature claiming that the cerebrospinal fluid in human poliomyelitis is not infective. However, it is known that in the experimental animal, following intrathecal introduction of virus, the cerebrospinal fluid remains infective forty-eight hours after inoculation but is no longer so at the sixth day—the time of development of symptoms (Clark and Amoss, 1914). Apparently virus may be eliminated from the cerebrospinal fluid rapidly. Assuming that virus did enter the cerebrospinal fluid from outside the nervous system, its detection would be likely only in the first twenty-four hours or so. With these considerations in view the reports on infectivity of the cerebrospinal fluid were scrutinized with particular reference to the times at which the tests were carried out. Many of the human reports deal with the paralytic stage of the disease—when, presumably, any virus which may have been in the cerebrospinal fluid has long since been eliminated or fixed. Abramson (1917) tested the sediment obtained by spinning fluid from forty cases—"many in the pre-paralytic stage"—with negative results. However, in the absence of more precise information as to time after infection—information which it may be very difficult if at all possible to obtain—the significance of this result is equivocal. So far as the human disease is concerned, therefore, no certain evidence is available as to the infectivity of the fluid at the time when it might be expected to be at its height.

Unfortunately the position is little better for experimental poliomyelitis. The scanty reports available are at variance, and adequate testing of cerebrospinal fluid at the crucial times following par-neural inoculation does not appear to have been carried out. Flexner and Amoss (1914) reported the presence of virus in the cerebrospinal fluid before the onset of the disease. However, they were using the intravenous route, for which the minimum infective dose and the incubation period are greatly increased. On the other hand, Fairbrother and Hurst (1930) made examinations of the cerebrospinal fluid at daily intervals following intracerebral inoculation of virus, and failed to find it in the fluid. These authors are of the opinion that axonic transmission far outweighs cerebrospinal fluid dissemination in importance. There are, however, so many factors which may influence the result of cerebrospinal fluid testing (e.g., time, dose of fluid, strain of virus, susceptibility of test monkey), and the point is of such importance that confirmation of their results is needed. Incidentally it should be noted, as the authors themselves point out, that any intracerebral inoculation is in no small measure also a subarachnoid introduction, since leakage along the needle track cannot be prevented. This fact throws the differences between the results of Clark and Amoss (1914) on the one hand and Fairbrother and Hurst (1930) on the other into still sharper relief.

Leiner and v. Wiesner (1910), in a small series of experiments, found that virus introduced intracerebrally could be readily detected in the cervical, prevertebral, and mesenteric lymph nodes but not in the inguinal group. This suggests that elimination takes place from the subarachnoid space along the same channels as serve for the elimination of particles of indian ink. However, Yoffey and Drinker (1939) found that the virus of poliomyelitis did not pass readily into the cervical lymphatic system following introduction into the nose, and concluded that the particular strain of virus used (Toomey "T") "did not spread by way of lymphatic vessels and nodes." Nevertheless, vaccinia virus, the particles of which are of the same order of magnitude as the smallest ink particles in our own experiments, readily utilizes lymphatic channels of spread (Yoffey and Sullivan, 1939). This difference is all the more remarkable since the virus of poliomyelitis is so much smaller (0.008–0.012 μ up to 0.058 μ—Elford, Galloway, and Perdrau, 1935; Levaditi, Kling, Païc, and Haber, 1936) than is that of vaccinia (0.125–0.175 μ—Elford and Andrewes, 1942).

Lesions of the Dorsal-root Ganglia

These lesions are a constant feature of poliomyelitis in human beings (Peabody, Draper, and Dochez, 1912), and may account for the severe pain of root type which is often a feature of the pre-paralytic stage (Russell, 1947). Experimental work suggests that whatever the route by which infection of the nervous system is brought about, such lesions are an early—sometimes the earliest—finding (Flexner and Amoss, 1914). This is what one would expect if the virus were in the cerebrospinal fluid and accumulated at the same outflow points round the nerve roots as does indian ink. Moreover, ink particles may be found in the depths of the dorsal-root ganglia, where many are taken up by the satellite cells. Flexner and Amoss (1914), using carmine particles "smaller than many bacteria," found the pigment to penetrate the ganglia only with difficulty. The fine ink particles employed by us do so readily, however, and no doubt virus may penetrate with even greater facility.

Distribution of Lesions

Hurst (1932) was of the opinion that the distribution of lesions in experimental poliomyelitis did not follow the pattern in which indian ink or trypan-blue was distributed after introduction in the monkey. Nevertheless, many of Fairbrother and Hurst's (1930) results would seem to be best interpreted on the basis of a cerebrospinal fluid spread of virus. Hurst himself envisages the early involvement of the globus pallidus, hypothalamus, and occasionally the thalamus as possibly due to infection along the perivascular spaces of the anterior perforated substance. Further evidence of invasion from the cerebrospinal fluid was met with in the midbrain and pons. Moreover, the distribution of lesions after infection by intrathecal, intraneural, or intracerebral routes "is essentially the same" (Hurst, 1932). The common factor in distribution would seem to be the cerebrospinal fluid, more especially as neither virus nor lesions are to be found in the areas intervening between widely scattered foci. Furthermore, the various levels of the cord become involved almost simultaneously; and Fairbrother and Hurst (1930), having postulated axonic transmission as the chief mechanism of spread, are forced to the conclusion that "there is an initial delay in the infection of fibres at the site of inoculation, after which the virus travels so rapidly as to reach distant regions of the nervous system as quickly as closely adjacent areas" (p. 40). A simpler working hypothesis would be that of cerebrospinal fluid spread, especially as it is entirely consonant with the observed phenomena. Indeed, the weight of evidence is such that Hurst (1930) himself feels impelled

to allow that "infection of the cerebrospinal fluid contributes to the final picture of fully developed poliomyelitis" (p. 1141).

The experimental results obtained with fine indian-ink particles (in rabbits) suggest that such material in the cerebrospinal fluid has widespread access to the nervous substance. Undoubtedly virus could disseminate in a similar manner, and this together with invasion from the superficial subarachnoid space along perivascular channels may account for the early lesions of poliomyelitis in loci accessible to cerebrospinal fluid.

The interesting results of Jungeblut and Spring (1930) require consideration. They found that intracerebral inoculation of virus in a monkey whose cord had been previously transected resulted in an attack of poliomyelitis, and although the distal segment of cord was freely bathed in cerebrospinal fluid neither virus nor lesions could be found in it. Howe and Bodian (1941) repeated and extended the work of Jungeblut and Spring, and found that even after careful section of the spinal cord and obliteration of the subarachnoid space (checked by indian ink and methylene-blue injection at necropsy) virus could pass down to the isolated lumbar cord in one case out of four after intranasal or intracerebral inoculation. (The technique in this one positive case, however, was such as to render the significance of the result equivocal.) On the other hand, inoculation of the sciatic nerve in animals with completely divided cord and subarachnoid space resulted in progression of virus into the upper-cord segment in two out of four cases—"possibly along the paravertebral sympathetic chains." However, further experiments showed that even after bilateral sympathectomy of two or three ganglia at the level of cord section had been carried out, inoculation direct into the lumbar cord resulted in progression of virus to the upper segment of nervous system in every case. The authors suggest that virus passed from the spinal cord to the wall of the gut via sympathetic-nerve fibres and thence to the brain-stem along the vagus nerve. An alternative and simpler interpretation will be considered below after further experimental results of our own have been described.

Channels of Access of Virus to the Cerebrospinal Fluid

The nasopharynx, tonsil, and upper respiratory tract have all been implicated from time to time as portals of entry for virus both in the human and in the experimental animal. Our own results have substantiated the existence of a definite anatomical pathway (in the rabbit) between the cranial subarachnoid space and the deep cervical lymph nodes by means of lymphatics which emerge through the jugular foramen. Since the tonsil, too, is connected with these nodes, the anatomical basis exists for lymphatic extension of virus from tonsil to cranial subarachnoid space. This connexion is in addition to the well-known and more readily demonstrable paths from the nasal mucosa.

In recent years much attention has been given to the gut as a portal of entry, largely from the standpoint of axonic transit of virus. Although there is a wealth of pathological evidence to suggest that the lymphoid tissue of the bowel is the site of early and often severe lesions (Wickman, 1913; Burrows, 1931; and many others), no serious attempt seems to have been made to examine systematically the possibility of a retrograde lymphatic spread of virus to the spinal cord from the bowel. In view of the definite connexions which have been shown to exist between the spinal subarachnoid space and the abdominal lymphatic system the possibility of bringing about experimentally retrograde spread of ink particles from the mesenteric and prevertebral lymph nodes to the cord was explored.

Retrograde Lymphatic Flow to the Cord: Experimental Methods and Results

In order to produce a stasis of the abdominal lymphatic drainage, a condition favourable to the retrograde flow of ink, ligation of the thoracic duct was performed. Because of the multiple lymphatico-venous communications met with in the lumbar region of many lower animals, the stasis resulting from such an operation is incomplete. The ligation was performed in the mid-chest region by a right transpleural approach, respiration being maintained mechanically throughout the experiment. Laparotomy was then performed and indian ink, made up in reconstituted plasma, injected into the aortic and mesenteric lymph nodes. By repetition of this procedure at two- to three-hourly intervals up to 4 or 5 ml. of ink could be introduced. Animals have survived these formidable operative procedures for periods up to twelve hours, during which time the pulse has been good and repeated doses of nembutal have been needed to prevent recovery of consciousness.

By this technique it has been possible to trace fine lymphatic channels backwards from the region of the cisterna chyli, usually through one or more tiny prevertebral nodes, round the side of the vertebral column. To such vessels come tributaries which collect lymph from the dorsal-root-ganglion region, and in particularly successful fillings of these minute vessels ink is to be found right on the dorsal-root ganglion itself and the adjacent cord membranes. Ink may even spread further back in the main lymphatic vessel and pass into the substance of the erector spinae musculature. A detailed account of these anatomical pathways (Field and Brierley, 1948) is not necessary here, but they may be summed up as follows. Lymphatic vessels in the substance of the erector spinae muscle unite to form one or more vessels which accompany the nerve and blood supply of the muscle towards the intervertebral foramen. Here lymph-vessel branches come in from the dorsal-root ganglion and its related epidural fat, and the main vessel then continues ventrally round the side of the spine, to reach the cisterna chyli or one of the many subsidiary longitudinal ducts which empty into it. As a rule a small lymphatic nodule is interposed in the course of the vessel on the anterolateral aspect of the spine (Fig. 2).

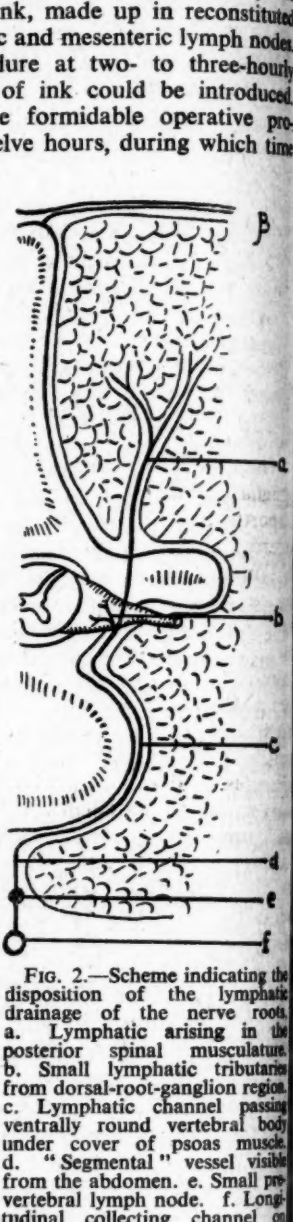


FIG. 2.—Scheme indicating the disposition of the lymphatic drainage of the nerve roots. a. Lymphatic arising in the posterior spinal musculature. b. Small lymphatic tributaries from dorsal-root-ganglion region. c. Lymphatic channel passing ventrally round vertebral body under cover of psoas muscle. d. "Segmental" vessel visible from the abdomen. e. Small prevertebral lymph node. f. Longitudinal collecting channel on front of spine.

It would seem, then, that under certain experimental (and admittedly highly artificial) conditions there is the possibility of a retrograde flow of fine particulate matter from the mesenteric and prevertebral nodes to the spinal cord. Conditions approximating those of the experiments out-

lined above might come about in man or monkey should a temporary functional occlusion of the thoracic duct leading to lymphatic stasis take place.

Unfortunately, little is known of the responses of the thoracic duct to physio-pathological stimuli, though the presence of plain muscle fibres and nerves in its wall suggests that variations in calibre do take place. Spasm of larger lymphatic channels is a phenomenon well recognized by experimental workers, and often arises, it is said, as the result of drying or unnecessary handling. This problem is receiving further attention.

It is of interest to recall that severe muscular exercise or bowel contraction results in a considerable increase in lymph flow from the parts concerned and a steep rise in pressure in the larger collecting channels (Drinker and Yoffey, 1941). These circumstances, together with a partial obstruction of the thoracic duct—perhaps at the aortic opening in the diaphragm—might succeed in creating a temporary diversion of lymph towards the spinal cord. It should be recalled in this connexion that the small "segmental" vessels which pass ventrally round the sides of the spine are not valved. Such a retrograde lymphatic invasion of the nervous system would also account for the early presence of lesions in the dorsal-root ganglia of the lumbar region. However, it must be realized that virus which gained access to the subarachnoid space by whatever route would also accumulate in this region (see above). Probably the same route of access does not hold for all cases.

The lymphatic vascular system related to the dorsal-root ganglia must be taken into account in evaluating the important results obtained by Howe and Bodian (1941) referred to above. These authors mention the possibility of lymphatic spread of virus but pass it over in favour of axonic dissemination along "some unusual nervous connexions." Our own results would seem to furnish a relatively simple lymphatic anatomical pathway by which virus might spread from an isolated lumbar segment of cord to the rest of the nervous system. Injection into the lumbar cord is virtually a lymphatic injection, assuming that virus may take a path readily available to fine indian-ink particles. The virus which leaves the lumbar sac by lymphatics from the dorsal-root ganglia may then readily pass upwards (the normal direction of flow) and subsequently in a retrograde manner to dorsal-root ganglia above the site of section. To us—unwedded as we are to the concept of axonic transmission—this seems a simpler explanation and one deserving of experimental testing. Furthermore, experiments by one of us (J.B.B.) have shown that injection of indian ink "into" the sciatic nerve will often lead to a beautiful filling of the lymph nodes around the bifurcation of the aorta. From these the injection mass may pass to the paravertebral lymphatic channels. It is not, therefore, surprising that infection of the upper segment of cord should have occurred in Howe and Bodian's elegant experiments following inoculation of the sciatic nerve with virus.

Summary of Conclusions

1. Particulate matter in the cerebrospinal fluid is rapidly removed and tends to accumulate at outflow points round the lumbar and cervical nerve roots.

2. The prevertebral lymph nodes are the "regional" nodes of the spinal subarachnoid space.

3. The presence of virus in the cerebrospinal fluid in both human and experimental poliomyelitis would seem to be uncommon. However, in view of the rapidity with which particulate matter has been shown to be eliminated from the subarachnoid space, it is probable that reports in the literature are concerned with stages when any virus which may have been present earlier has already been eliminated.

4. The distribution of fine particulate matter in the cerebrospinal fluid has been compared with that of the early lesions of poliomyelitis, and certain similarities have been noted suggesting that the fluid may play a more important part in the pathogenesis of the condition than that usually accorded it by the adherents of the theory of neuronic transmission.

5. The anatomical basis for invasion of the nervous system along direct lymphatic communications has been described. Lymphatics emerging through the jugular foramen end in deep cervical lymph nodes which also drain the tonsil and nasopharyngeal region. The lymphatic connexions of the cranial subarachnoid space via the neurovascular foramina are in addition to the well-known connexion via the sheaths of the olfactory nerves and the nasal mucosa.

In relation to the spinal subarachnoid space a system of valveless lymphatic channels has been described. They are summarized in Fig. 2. Lymphatic vessels start in the substance of the post-spinal musculature, and pass ventrally in company with the nerve and blood supply of the muscle towards the neighbourhood of the intervertebral foramen. Here fine tributaries reach the lymphatic from the neighbourhood of the dorsal-root ganglia and arachnoid sac around the nerve roots. Having received these, the lymphatic continues around the side of the vertebral body to end in one of the several valveless longitudinal trunks on the front of the spine.

This lymphatic pathway has been filled experimentally with indian ink in a retrograde manner from the mesenteric and prevertebral lymph nodes, after preliminary ligation of the thoracic duct in the thorax. Whilst great caution must, of course, be exercised in carrying over results obtained in the rabbit to man and monkey, the possibility of a similar retrograde passage of virus to the lumbar region of the cord must be maintained.

6. Certain recent results in experimental poliomyelitis have been discussed in the light of the lymphatic connexions set out in this communication.

It is a pleasure to record our indebtedness to Professor J. M. Yoffey for his never-failing interest and encouragement, and for his expert advice on general problems of technical procedure appertaining to lymphatics.

REFERENCES

Abramson, H. L. (1917). *J. Amer. med. Ass.*, **68**, 546.
Brierley, J. B., and Field, E. J. (1948). *J. Anat., Lond.* In the press.
Burrows, M. T. (1931). *Arch. intern. Med.*, **48**, 33.
Clark, P. F., and Amoss, H. L. (1914). *J. exp. Med.*, **19**, 217.
Drinker, C. K., and Yoffey, J. M. (1941). *Lymphatics, Lymph and Lymphoid Tissue*, Harvard Univ. Press, Cambridge, Mass.
Elford, W. J., and Andrewes, C. H. (1942). *Brit. J. exp. Path.*, **13**, 36.
—— Galloway, I. A., and Perdrau, J. R. (1935). *J. Path. Bact.*, **40**, 135.
Faber, W. M. (1938). *Amer. J. Anat.*, **62**, 121.
Fairbrother, R. W., and Hurst, E. W. (1930). *J. Path. Bact.*, **33**, 17.
Field, E. J., and Brierley, J. B. (1948). *J. Anat., Lond.* In the press.
Flexner, S., and Amoss, H. L. (1914). *J. exp. Med.*, **19**, 411.
Goldmann, E. E. (1913). *Vitalfärbung am Zentralnervensystems.* Verlag von Königl. Akademie der Wissenschafte. Berlin.
Hamperl, H., and Heller, H. (1934). *Arch. exp. Path. Pharmak.*, **174**, 517.
Howe, H. A., and Bodian, D. (1941). *Bull. Johns Hopk. Hosp.*, **69**, 86.
Hurst, E. W. (1930). *J. Path. Bact.*, **33**, 1133.
—— (1932). Ibid., **35**, 41.
Iwanow, G. (1928). *Z. ges. exp. Med.*, **64**, 356.
Jungeblut, C. W., and Spring, W. J. (1930). *Proc. Soc. exp. Biol., N.Y.*, **27**, 1076.
Leiner, C., and v. Wiesner, R. (1910). *Wien. klin. Wschr.*, **23**, 817.
Levaditi, C., Kling, C., Païc, M., and Haber, P. (1936). *C. R. Acad. Sci., Paris*, **203**, 899.
Peabody, F. W., Draper, G., and Dochez, A. R. (1912). A Clinical Study of Acute Poliomyelitis. Monogr. Rockefeller Inst. Med. Res., N.Y., No. 4.
Quincke, H. (1872). *Arch. Anat. Physiol., Lpz.*, 153.
Russell, W. R. (1947). *British Medical Journal*, **2**, 1023.
Schaltenbrand, G., and Putnam, T. (1927). *Dtsch. Z. Nervenheilk.*, **96**, 123.
Schwalbe, G. (1869). *Zlb. med. Wiss.*, **7**, 465.
Spina, A. (1900). *Pflüg. Arch. ges. Physiol.*, **83**, 120.
—— (1901). Ibid., **83**, 415.
Weed, L. H. (1914). *J. med. Res.*, **31**, 21.
Wickman, I. (1913). *Acute Poliomyelitis. (Heine-Medin Disease).* Authorized English translation by W. J. M. A. Maloney. N.Y. Nerv. and Ment. Dis. Monograph, No. 16.
Woollard, H. H. (1924). *J. Anat., Lond.*, **58**, 89.
Yoffey, J. M., and Drinker, C. K. (1939). *J. exp. Med.*, **70**, 83.
—— and Sullivan, E. R. (1939). Ibid., **69**, 133.

EPIDEMIOLOGY OF THE 1947 OUTBREAK OF POLIOMYELITIS IN ECCLES*

BY

W. P. SWEETNAM, M.B., Ch.B., D.P.H.

Assistant Medical Officer of Health, Lancashire County Council; Deputy Medical Officer of Health, Borough of Eccles

Eccles covers an area of about 3,500 acres; its southern boundary is formed by the Manchester Ship Canal. Irlam Urban District lies to the west; Worsley and Swinton Urban Districts to the north, and Salford County Borough to the east. One-half of the borough consists of reclaimed peat land, unsuitable for building. The other half, in which all but one of the cases occurred, is completely "built up."

This portion of the borough is bisected from north to south by the Bridgewater Canal and is quartered by the intersection of two main arterial roads. The estimated population in June, 1947, was 41,940, living in 12,717 structurally separate dwellings. Practically the whole of the population falls into the Registrar-General's three lower social grades. The infant mortality rate in 1947 was 45.5. The borough is a typical Lancashire working-class urban district.

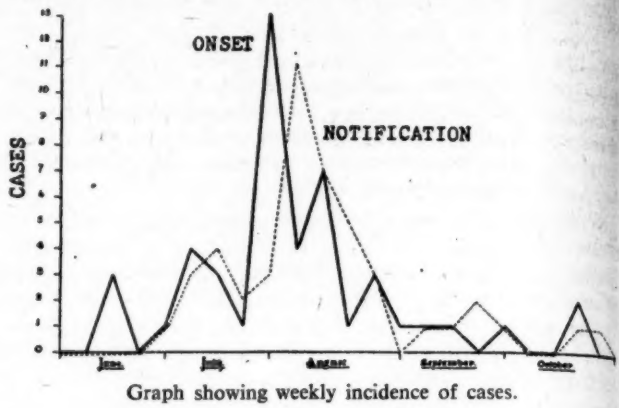
The method of field study followed broadly the usual pattern of inquiry into cases of infectious disease, being rather more extensive and detailed than usual. A visit was made to the household immediately on notification; and details of dates of onset, list of members of the household, giving ages, occupation, and places of work, and particulars of any recent illnesses, were recorded on a standard form. Any known direct or indirect contact was noted, also visits and visitors. Details and sources of foodstuffs, especially milk, ice-cream, and fruit, were noted, together with usual inquiries about numbers of rooms, sanitary arrangements, and the presence of domestic animals, flies, and vermin. Further information received from outside sources usually necessitated other visits to a household; it was often found that useful additional information could be obtained at these later visits, when people had had an opportunity to think about the questions previously asked.

In all, 58 cases and 200 contacts were investigated in this manner: 46 cases and 180 contacts in Eccles and 12 cases and 20 contacts in the neighbouring district of Irlam—these latter in connexion with the origin of the outbreak in Eccles.

General Epidemiological Findings

Between July 4 and Nov. 1, 46 notifications were received, The first case occurred on June 18, the date of onset of the last was Oct. 25. A graph of the weekly incidence of cases shows a slow rise in the third week in June, a more pronounced rise in the middle weeks of July, a peak, explosive in type, in the week of July 27 to Aug. 2, followed by an initial rapid decline and a slower tapering off. At first sight the explosive type of curve suggests a disease of short incubation period and high infectivity in a susceptible population—an impression that is not substantiated on closer examination of the epidemiological findings.

The attack rate and age distribution are shown in Table I. It will be seen that the brunt of the infection fell upon pre-school children (61% of total). There was only one case in a child under 1. The eldest of the series was a man aged 26. The attack rate, 1.09 per 1,000, is very high—the highest to occur in any local government district during this epidemic. There were three fatal cases, giving a case mortality of 6.5%. The sex incidence was 63% male, 37% female. In considering these figures it must be emphasized that the overall number of cases is small.



Graph showing weekly incidence of cases.

TABLE I.—*Attack Rate and Age Distribution*

	Age Groups in Years				
	0–4	5–9	10–14	15–	Total
No. of cases	28	11	3	4	46
Percentage	61	25	7	7	100
Attack rate per 1,000 ..	8·07	3·85	1·14	0·12	1·09

Incubation Period

Estimations of the incubation period have varied widely; the figures given in textbooks range from six to twelve days. It was found difficult to estimate an incubation period. To do this accurately it was thought necessary to establish a single exposure of limited duration. In only one instance was there a direct case-to-case contact; again, there was only one instance of two cases in one household, these two cases occurring within two days of each other and both probably infected from a common source. These limitations, combined with the fact that the outbreak occurred in an open populous community, largely accounts for this difficulty. In five of the early cases the criteria of a single exposure of limited duration were satisfied.

Case 1.—It was established that this patient, the first case in Eccles, had been visited by a cousin from Irlam. The visiting child lived in a part of Irlam where a small group of cases had occurred. The visiting child herself developed a sore throat, general malaise, and a temperature for 24 hours, and the following day visited the Eccles child. These two children were on affectionate terms, and kissed each other. Nine days after this visit the Eccles child developed poliomyelitis.

Case 2.—This child, aged 4, lived in an area up to then free from infection, and had only once been away from the immediate neighbourhood of its home for over a month. It was then taken to visit a grandmother in an area where three cases had already occurred. During this visit the child was nursed by the sister of a previous case who herself developed an abortive attack next day. The child developed poliomyelitis nine days after the visit.

Case 3.—This is the only example of a case-to-case contact. A girl and a boy, aged 11 and 12 respectively, both stamp-collectors, exchanged stamps, during which the usual licking of stamp hinges took place. The boy became ill the same evening and the girl 13 days later. For most of these 13 days the girl had been away in Anglesey on holiday and no other contact could be established.

Case 4.—The patient, an adult male, played cards with the father of two children who had previously contracted poliomyelitis within two days of one another. The cards used were old and the players licked their fingers. The man became ill exactly a week later. An interesting feature of this case was that the man had a short febrile illness for the 48 hours following the card game; this "illness of infection" is known to occur within

*The basis of a paper given to the North Western Branch of the Society of Medical Officers of Health, Manchester, Nov. 14, 1947.

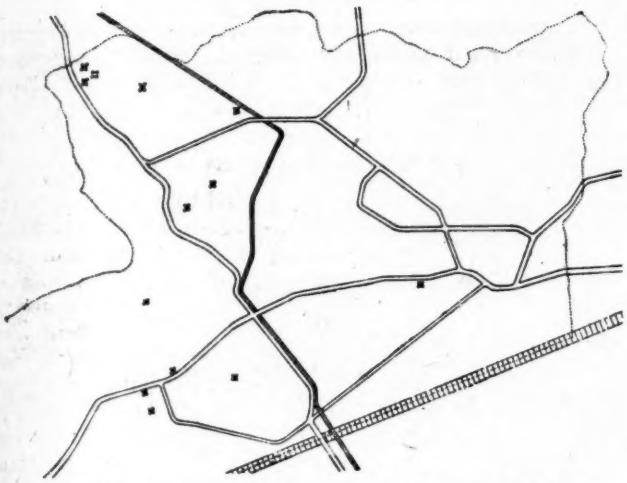
one or two days of exposure (McFarlan, Dick, and Seddon, 1946). He recovered completely, returned to his work as a manual labourer, and became ill again with typical symptoms of onset five days later—that is, seven days after contact.

Case 5.—This patient, a child of 15 months, the second case to occur on the eastern side of the borough, had been away on holiday on a farm in North Wales and returned on July 18. It became ill on July 27 and must have become infected during these nine days. The family consisted of the child and mother only. On the day after the return from holiday, July 19, the child was taken to the western side of the borough to visit relatives living within a few doors of a previous case and contacts of that case, and became ill eight days later.

These five instances give incubation periods of 7 days, 8 days, two of 9 days, and 13 days.

Course of the Outbreak

Notifications in Irlam were maximal during the weeks of June 7 to 21; in Eccles in the week ending Aug. 2; in Salford, immediately to the east, during the week ending Aug. 9; and in Manchester, further east again, during the week ending Aug. 30. There seems to have been a marked spread from west to east as is shown in Maps 1, 2, and 3.



MAP 1.—Distribution of Cases with onset June 18 to July 26. =Main roads. ⧺Canals.

MAP 2.—Cases with onset July 27 to Aug. 2.

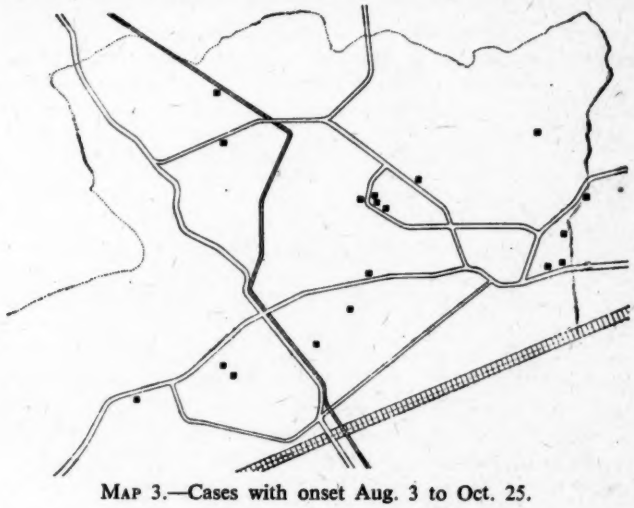
Map 1 shows the distribution of the 13 cases which started during the six weeks up to July 26. All these, except one, are on the westward side of the Bridgewater Canal. The exception was a case in which it was possible to assess an incubation period (Case 2). The family consisted of one child (the patient) and the mother and father. During the week when the child was ill at home the mother did not leave the house and the father was working overtime on the west side of the borough; these circumstances probably account for the lack of an early spread from this focus. The case marked with a hollow cross was a fatal case that was never notified, but one from which it was possible to assess an incubation period (Case 1).

Map 2 shows the distribution of the 14 cases which began during the week of maximum incidence, July 27 to Aug. 2. These are widely scattered throughout the borough.

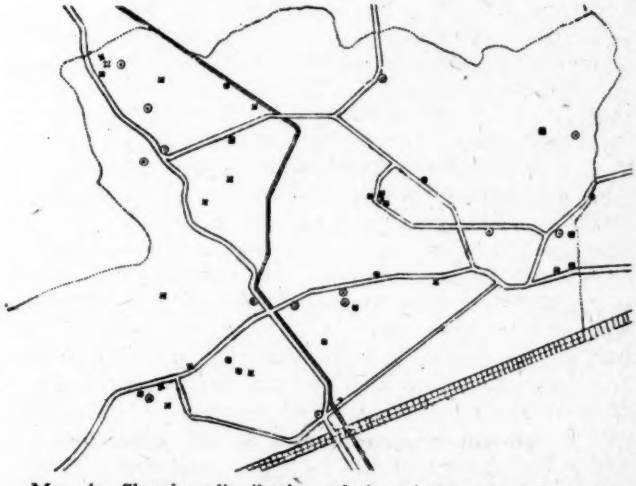
Map 3 shows the distribution of the 18 cases which occurred between Aug. 3 and Oct. 25, the date of onset of the last case. These cases tend to lie on the eastward side of the borough.

Map 4 is a composite map showing the distribution of all cases throughout the whole period. There is a tendency for cases to lie in close proximity to the main roads. Over one-half lie either on or within 50 yards of a main road, and three-quarters within 100 yards of a main road. There is some suggestion of grouping of cases. A closer examination of dates of onset reveals some centrifugal spread in two or three areas.

The whole of this area, only a mile and a half square, is densely populated. The outbreak was confined to the western half of the area for nearly six weeks, and it seems that the Bridgewater Canal may have formed a barrier. This may seem to be far-fetched, but on closer examination it can be seen that communication between the two portions of the borough is restricted to three bridges, of which the lower one is rarely used by pedestrians. Each portion of the borough tends to have its own employment and amusement facilities and its own shopping centres.



MAP 3.—Cases with onset Aug. 3 to Oct. 25.



MAP 4.—Showing distribution of the whole series of cases.

Mode of Spread (Human)

Contacts

A history of direct or indirect contact with a previous case within a fortnight of onset was obtained in 20% of cases. If one adds visits of the patient or a member of the household from an area previously free from infection to an immediate locality where cases had already occurred the proportion is raised to 33%. The addition of instances where contact had almost certainly occurred, although not admitted, raises this proportion to 46%.

It was very striking how often during the first half of the outbreak indirect contact between cases could be established and, in contrast, how very rarely during the latter half.

During the same periods direct contacts alone had increased from about 50 to over 200; indirect contacts increased by a far bigger proportion, and were very widely scattered throughout the whole borough. Opportunities for indirect contact must have been very numerous during the latter half of the outbreak and correspondingly difficult to establish with certainty. Indeed, with opportunities for contact so great it is difficult to explain the escape of so many children. This proportion of indirect contacts suggests a carrier wave preceding the actual cases of paralysis.

The Abortive (Non-paralytic) Cases

An increasing interest has been taken in these cases in recent years. They are known to excrete the virus from the nasopharynx (Paul and Trask, 1932) and in the stool (Horstmann *et al.*, 1944, 1946). During the Eccles outbreak any short non-specific illness characterized by malaise, sore throat, headache, with or without backache or neck stiffness and not progressing to paralysis, was regarded as an abortive illness. There appeared to be no advantage, in an epidemiological investigation, in adopting the further clinical subdivision of such illnesses into abortive and non-paralytic forms. These symptoms could normally be indicative of many common respiratory infections but for the important fact that they occurred during an epidemic of poliomyelitis and also during a hot dry summer when respiratory infections would be least expected.

The data concerning abortive cases are unsatisfactory since they are largely based on a history of illness in contacts occurring at about the same time as the illness of the frank case. There were, however, 15 such instances of abortive poliomyelitis. This figure is almost certainly too low. Five of these cases were probably responsible for infecting persons who developed frank paralytic attacks of poliomyelitis.

In an attempt to assess more accurately the prevalence of abortive cases a survey of two areas of the borough during the outbreak was made (Table II). In these two areas the housing conditions and social status of the inhabitants were comparable. Each area contained a small communal children's playground. In Area "A" a frank case of poliomyelitis had occurred. In Area "B" no cases had been notified. A house-to-house census of 50 houses in each area was undertaken and careful inquiries made of any illnesses during the months of July, August, September, and October. Two visits to each household, one at the beginning of the outbreak and another at the end, were made. Each householder was asked to keep a careful record of all minor illnesses, and all school absentees living in these two areas were investigated. Area "A," in which the frank case occurred, contained 110 adults and 51 children under 15. In this area one adult and 15 children gave histories of illnesses compatible with a diagnosis of abortive poliomyelitis. These 16 cases occurred in two distinct foci—12 in adjacent households surrounding the house in which the frank case occurred, and four at the other end of this area but also in adjacent houses. Area "B" contained 93 adults and 41 children under 15. In this area two adults and three children gave histories suggestive of abortive illnesses (Table II). These five cases were widely dispersed throughout this area.

TABLE II.—*Prevalence of Abortive Cases in the Immediate Neighbourhood of a Frank Case*

Area	No. of Houses	Population		Frank Cases		Abortive Cases	
		0–15	Over 15	0–15	Over 15	0–15	Over 15
A	50	51	110	1	0	15	1
B	50	41	93	0	0	3	2

The high proportion of abortive to frank cases is borne out by inquiries made of general practitioners in the borough, several of whom estimated that in their private practices they saw between 10 and 20 abortive cases to one frank case.

Carriers

Carriers are known to excrete the virus for the same period as frank cases (Rhodes, 1947). The Eccles outbreak started with four cases practically simultaneously. The first (Case 1) was infected by a cousin from Irlam (an abortive case). The other three were probably infected by healthy carriers, household contacts of these cases being workmates of direct contacts of Irlam cases. Several later cases (including Cases 4 and 5) were also probably infected by healthy carriers.

Mode of Spread (Non-human)

The restriction of infection to the westward side of a canal less than 25 feet wide for 38 days, the geographical distribution of cases, together with other convincing epidemiological evidence, indicated that water, milk, other foods, rodents, domestic animals, flies, and railways played no significant part in the spread of infection.

Discussion

Age Distribution.—The corrected notifications for England and Wales for 1947 show that only 31% of cases occurred in the 0–4 age group (Registrar-General, 1947) compared with 61% in Eccles. Judging by the findings of observers in other countries the factors which probably account for the lower age distribution in Eccles are (1) the early onset of the epidemic (the last case occurred on Oct. 25, at which time cases were still being notified in England and Wales at the rate of over 250 a week); and (2) the high population density. The inhabited portion of the borough has a density of over 30 persons per acre.

Mode of Spread.—Factors which strongly indicated that, in Eccles, human contact played the major part in the spread of infection were: (1) evidence of carrier-to-case contact and contact between abortive and frank cases; (2) evidence of numerous abortive cases, especially in close proximity to frank cases; (3) a marked tendency for cases to lie on or in the immediate neighbourhood of main roads; (4) some suggestion of grouping of cases and centrifugal spread; (5) an initial marked restriction of the spread of infection by the Bridgewater Canal, where communications between the two halves of the borough are restricted; (6) a rapid spread once that barrier was crossed; (7) the exclusion of other important means of spread.

Sources of Infection.—The virus has been recovered from the pharynx of patients (Howe *et al.*, 1944) and contacts (Flexner *et al.*, 1913), from the faeces of cases (Pearson and Rendtorff, 1945) and contacts (Pearson *et al.*, 1945). Space does not permit a discussion of the

relative importance of these two sources of the virus. In the few instances during this outbreak where there was evidence of the prolonged or intimate personal contact usually associated with faeces-spread diseases, the circumstances strongly suggested a nasopharyngeal spread of infection. Five of such instances are described in connexion with the incubation period.

Preventive Measures

The experience in Eccles was that schools played no significant part in the spread of infection. Two-thirds of the total cases and one-half of the cases among school-children occurred during the time the schools were closed for the summer holidays. No infection could be traced to school contact.

Notification should include abortive or non-paralytic cases. It has already been noted that these cases are many times more prevalent than the frank paralytic cases, are known to be infectious, are rarely recognized as such, and play a major part in the spread of infection—certainly a much more important part than the frank paralytic case in hospital.

It would be an advantage if the present regulation requiring the separate notification of polio-encephalitis and poliomyelitis was superseded by one reverting to the more accurate and comprehensive term of polio-encephalomyelitis, with perhaps a further subdivision into paralytic and non-paralytic or abortive cases. This would encourage more frequent and earlier notification and greatly assist the medical officer of health or those responsible for control and prevention.

As over two-thirds of the cases in England and Wales occurred in persons over the age of 5 the term "infantile paralysis" must now be regarded as a misnomer.

The isolation period usually recommended is three weeks (Memo. to Ministry of Health, 1947). In view of the findings of Horstmann *et al.* (1944, 1946) that 50% of patients are still excreting the virus in the stools between the third and the fourth week, this period is theoretically too short. The collected findings of Brown *et al.* (1948) that 20% of family contacts excrete the virus would indicate that isolation measures should, ideally, include the whole family.

Viewing in retrospect the wide distribution of cases (Map 4) and the high attack rate (Table I) one cannot help feeling critical of the efficacy of the accepted preventive measures. It must be realized, however, that although these measures are not likely to stop an epidemic they will certainly slow down its spread. Since epidemics nearly always abate with the onset of cold weather; this "slowing down" may be expected to result in a large number of susceptible persons remaining untouched who would otherwise become permanent cripples.

Summary

During the 1947 poliomyelitis epidemic the borough of Eccles suffered the highest attack rate of any local authority district. There were 46 cases, giving an attack rate of 1.09 per 1,000 of the population. The case mortality was 6.5%.

The incubation period was 7 to 13 days. Only one family had more than one frank case. There was only one instance of a frank case-to-case contact.

The epidemic was confined for nearly six weeks to the western half of the borough by a canal which restricted communications between the two halves.

The results of field studies indicated that the chief factor in the spread of infection was human contact, in which abortive cases and healthy carriers played the major part. The presence of the virus in the nasopharynx of patients and carriers was of much more importance for the spread of infection than was its presence in faeces.

A survey undertaken revealed the presence of numerous abortive cases, especially in close proximity to frank cases, and suggested that of every 20 persons who showed clinical signs and symptoms of infection less than one developed into a frank paralytic case.

Suggestions to improve the present system of notification are made, particularly the necessity for notifying abortive cases.

I am indebted to Dr. J. E. Spence, M.O.H. to the Borough of Eccles, for his invaluable encouragement and advice, and to members of his staff for assistance in the field work and in the preparation of the charts.

References

Brown, G. C., *et al.* (1948). *J. exp. Med.*, **87**, 21.
Flexner, S., *et al.* (1913). *J. Amer. med. Ass.*, **60**, 201.
Horstmann, D. M., Melnick, J. L., and Wenner, H. A. (1946). *J. clin. Invest.*, **25**, 270.
—— Ward, R., and Melnick, J. L. (1944). *J. Amer. med. Ass.*, **126**, 1061.
Howe, H. A., *et al.* (1944). *Proc. Soc. exp. Biol., N.Y.*, **56**, 171.
McFarlan, A. M., Dick, G. W. A., and Seddon, H. J. (1946). *Quart. J. Med.*, n.s., **15**, 183.
Memo. to Ministry of Health (1947). *British Medical Journal*, **2**, 141.
Paul, J. R., and Trask, J. D. (1932). *J. exp. Med.*, **56**, 319.
Pearson, H. E., and Rendtorff, R. C. (1945). *Amer. J. Hyg.*, **41**, 179.
—— *et al.* (1945). Ibid., **41**, 188.
Registrar-General (1947). Quarterly returns of infectious diseases.
Rhodes, A. J. (1947). *Bull. Hyg.*, **22**, 362.

THE OECOLOGY OF POLIOMYELITIS IN A MILITARY CAMP IN 1947

BY

G. JOLY DIXON, M.A., M.D., M.R.C.P.

Lieutenant-Colonel, R.A.M.C.; Officer in Charge, Medical Division, Military Hospital, Catterick Camp, Yorkshire

The widely held view that cases of overt poliomyelitis are to be regarded as the severer examples of a carrier epidemic makes the recognition of early non-paralytic cases of special importance (Memo. by M.O.s to Ministry of Health, 1947).

This paper is concerned with the search for such a carrier epidemic at Catterick Camp, where paralytic cases occurred during the 1947 epidemic. The population at risk can be broadly classified as follows: 13,500 to 14,500 young soldiers under training living in huts each containing 20 beds, and 3,540 inhabitants of 1,169 Army quarters—1,785 adults, 1,612 children under 15, and 143 children over 15.

Towards the end of June a case of poliomyelitis in the pre-paralytic state was isolated in the Military Hospital, and two other patients who did not develop paralysis were similarly treated because of meningism. After receiving information about another paralytic case in a near-by camp instructions were issued to admit all suspicious cases to hospital. This procedure resulted in the admission of eight paralytic cases, including a fatal one, ten probably abortive cases, and eight suspects. The paralytic cases included five young soldiers and one child from the camp area; four of these became ill between Aug. 2 and 26, one in June, and one in October.

Symptomatology of Paralytic Cases

An acute onset with headache, stiffness and pain in the back, occasional vomiting, and twitching of the muscle groups which later became paralysed was the rule. However, five of the eight paralytic cases had been slightly indisposed for about a week; only one had sought advice, and he had felt well enough to go on leave hitch-hiking the day before he was finally taken ill (Table I).

Objectively the early cases presented with pyrexia ranging from 101 to 102° F. (38.3 to 38.9° C.), slight drowsiness,

TABLE I.—*Paralytic and Fatal Cases of Poliomyelitis*

Case	Age in Years	Service in Months	No. Days Prodromal Illness	Date of Onset of Acute Symptoms	First Date of Observation	No. Days Headache before Observation	No. Days Backache before Observation	No. Days Objective Spinal Rigidity	Maximal Temp. (° F.)	No. Day Fever Observed	Days after (5) C.S.F. Examined	Mg. Protein per 100 ml. in C.S.F.	No. Leucocytes in C.S.F.	Interval in Days between Acute Onset and Paralysis	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
P1	18	6	10	2/3	5/3			4		4	4	40	240	0	Gross weakness of right glutei, hamstrings and shin muscles, and right triceps
P2	18	9	10	16/6	16/6	1	2	7–14	102·4	4	1	45	222	2	Transient retention of urine. Paralysis of left shin muscles. Gross weakness of all other muscles of left leg. Weakness of muscles right hip and knee
P3	16	0	14	2/8	3/8	0	1		101	8	2	80	190	4	Gross weakness left abdominal muscles, flexors and abductors right thigh, and right shin muscles
P4	26	19	2	6/8	6/8	2	2	3	100·8	4	Same day	95	26	1½	Weakness right biceps. Gross weakness all muscles moving left hip
P5	12	0	0	27/8	28/8	½	½	3	102	3				4	Slight weakness in flexion and dorsiflexion of left ankle
P6	19	18	0	28/8	12/9	1	1		100						Weakness all movements of right ankle, slight weakness right hip. Treated in lines; complaining of stiff neck; paresis discovered only day of admission to hospital, Sept. 12, but probably present on Sept. 6. Treated in C.R.S. Aug. 28 to Sept. 6
P7	21	24	7	5/10	6/10	½	½	28	102·4	4	2	70	260	2	Paralysis of all muscles of left shoulder. Weakness left biceps, triceps, right triceps, serratus. Transient diplopia
D1	18	9	7	?	22/7	6	+	1	101·5	1					Respiratory distress occurred within one hour of observation; died of respiratory failure within 24 hours

and furred tongue. The most characteristic sign was stiffness of the back, especially pronounced in the lumbar and dorsal spine, where the immobility was almost complete, making the body rigid like a plaster cast. Limitation of neck flexion prevented the chin being flexed more than half-way to the chest wall; Kernig's sign was present after flexion of 45 degrees. The combination of these factors made it impossible for the patients to sit up in bed. Elicitation of these signs usually produced pain in the back in either the mid-dorsal or the lumbar region. The skeletal muscles were often tender on palpation, and localized pains occurred in the regions later paralysed. The pyrexia became remittent with maximal temperatures varying between 100.8 and 102° F. (38.2 and 39.1° C.) and lasting three to six days. Only one case developed anything resembling "dromedary" pyrexia observed in certain other epidemics (McFarlan, Dick, and Seddon, 1946). This child (Case P5) had fever of 102° F. (38.9° C.) for three days and meningism, then after two symptom-free days developed a minor palsy of one leg with recrudescence of pyrexia to 99° F. (37.2° C.).

Six of the eight paralytic cases were treated at complete rest in bed within a few hours of developing acute symptoms. The early history of the fatal case (D1) is more obscure, but it is possible that he delayed reporting sick for a week. The palsy in the seven surviving paralytic cases occurred towards the end of the feverish period, between two and four days after the onset of acute symptoms. In only two cases was this palsy mild enough to leave any hope of recovery. This finding is in sad contrast with those of Ritchie Russell (1947) in a much larger series. He divided his cases into those in which palsy was mild enough to allow hope of full recovery and those in which residual impairment of function was to be expected, and observed that 18 of the first group had had rest in bed within 24 hours of the development of acute symptoms and 19 of the second had not had this advantage; the reverse had occurred in only three and two patients respectively. It could be suggested that, as he examined convalescents, many mild cases that did not take to bed had escaped his notice.

The cerebrospinal fluid in the five paralytic cases examined showed a pleocytosis ranging from 26 to 260 cells per c.mm., the cells being chiefly lymphocytes. The protein content of the fluid varied from 40 to 95 mg. per 100 ml. (Table I).

Differential Diagnosis

It is important to stress that before the development of the palsy poliomyelitis can only be suspected. A further group of 16 patients from the camp so resembled the paralytics in their earlier stages that they were suspected of being cases of poliomyelitis. In eight of these the discovery of other disease, presumably adequate to account for their symptoms and signs, probably refuted the diagnosis of poliomyelitis. Only two of them had abnormal cerebrospinal fluid; both fell ill in the month of June, and the remainder in September and October. It seems probable that, as Warin (1947) postulated for Leeds, the known occurrence of poliomyelitis influenced the diagnosis in later cases.

Presumed Abortive Cases

Ten of the suspected cases never developed sufficient signs or symptoms to warrant an unequivocal diagnosis. Their main interest lies in the fact that six of them occurred in Catterick Camp between July 23 and Aug. 28 and so coincided with the paralytic cases. Their illnesses were characterized by backache, headache, stiffness in the neck, and fever. In two meningism occurred; three vomited, and another two developed doubtful paresis of short duration. In six of these patients subjected to lumbar puncture the cerebrospinal fluid was found to be abnormal (see Table II).

The clinical findings in these 10 patients are similar to those labelled non-paralytic poliomyelitis by Casey, Fishbein, Abrams, and Bundesen (1946) among 14 children who became ill five to 25 days after being in contact with the same febrile case of poliomyelitis. Andelman, Fishbein, Casey, and Bundesen (1946) at the same time examined the cerebrospinal fluid of 19 contacts suspected of suffering from subclinical poliomyelitis and found the protein content to be above 45 mg. per 100 ml. in 79%, as against a similar finding in only 10% of 10 non-contact control children who had suffered a febrile illness not thought to be due to the virus of poliomyelitis.

TABLE II.—*Cases of Short Fever resembling Initial Stages of Poliomyelitis*

Case	Sulphonamide Administered	Age	No. Day Prodromal Illness	Day of Onset of Acute Symptoms	Admitted to Hospital	Headache (Days before Admission)	Backache (Days before Admission)	Stiffness in Neck	Abdominal Pain	Nausea	Vomiting	Sore Throat	Congestion of Fauces	Cough	Guarding of Abdominal Muscles	Furred Tongue	Objective Rigidity of Spine	Mild Mental Confusion	Maximum Temp. (° F.)	No. Days Fever after Admission	No. Days after (4) C.S.F. Examination	Mg. % Protein in C.S.F.	No. Leucocytes in C.S.F.	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
A1	+	17	2	25/6	25/6	2		+	+	+		+		+			+		102	4	2	60	150	Dysphagia for solids for about three weeks after fever
A2		24	½	1/7	1/7	½	½		+						+				100·2	1				
A3		19	2	14/7	14/7	2										+	+		104	10	2	35	27	Pain on moving eyes across; first symptoms lasted days
A4		19	3	23/7	23/7	3		+								+			101·4	3				Doubtful weakness of left peroneals on eighth day
A5	+	22	2	24/7	24/7	2		+			+	+	+				+	+	102·4	2	Same	50		Hyperaesthesia of skin; knee-jerks absent two days
A6		21	0	28/7	28/7	+					+							+	102·4	2	Same	45	1	
A7		19	4	20/8	22/8	5	3												103	3	2	45	4	Stiffness and aching limbs
A8		19	3		21/8	3													103	2				
A9		18	½	24/8	25/8	½	½				+								100·8	1				Knee-jerks absent at one examination only
A10		15	9	20/9	21/9	½	9				+						+		100	2	1	60	16	Vertigo and photophobia

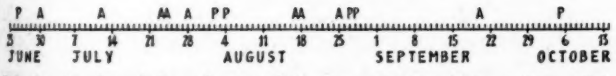
Cases A1 and A10 came from near-by units. Case A2 : A married corporal living in quarters in camp. Case A5 : Cerebrospinal fluid contained 440 red blood cells per c.mm.

Epidemiology

No evidence of contact between any of the paralytic cases in Catterick was found, and no two cases came from the same unit. In one instance a presumed abortive case (A5) used the same wash-place as a paralytic patient (P4) and sickened 10 days after the latter was removed to hospital; a 13-day interval was also observed between two abortive cases (A2 and A3) belonging to the same regiment who were probably not in contact.

No infection of the nursing personnel attending the cases was observed. Most of these nurses were young male orderlies of the same age group as the patients, and no masks were worn. In view of McAlpine's (1945) report of fatal poliomyelitis in two nursing sisters attending cases in India, more precautions might have been advisable. One member of the hospital staff, a clerk aged 19 (Case A4), became ill with presumed abortive poliomyelitis, but his only contact with a case or suspected case occurred four or five hours before he developed acute symptoms.

Up to the middle of August the paralytic cases and suspected non-paralytic cases occurred singly or in pairs at intervals of approximately nine to 14 days (see Graph);



Graph showing dates of onset of cases. P=Paralytic poliomyelitis. A=Presumed abortive poliomyelitis.

later this pattern was lost. This type of case-spacing is described by Casey, Fishbein, Abrams, and Bundesen (1946), who postulate carrier waves in which only 2% of the cases develop paralysis, the waves being due to an incubation period of six to 14 days as observed by Casey (1942) and Aycock and Kessel (1943).

Search made for such carrier waves by examination of sick reports and admissions suggested that the diagnoses of tonsillitis, pharyngitis, coryza, and short fever were applied to different clinical manifestations of the same infection, as several of these conditions were often recorded simultaneously in the same unit, which would later be free of similar cases for some weeks. During the period June to October the weekly incidence of the aggregate of these diseases in the camp was between 0.07 and 1.1 cases per 1,000, which is not greater than in previous years. Twenty-four of these cases were thought to be serious enough for admission to hospital as opposed to the Camp reception station, and from the throats of 17 of these β-haemolytic streptococci were cultured.

There were some ten large units of over a thousand men in the camp. One of these, which had furnished a case of paralytic poliomyelitis, produced only two instances of minor fever, and these at an interval of over three months from the case of poliomyelitis. Another similar unit, which had the highest incidence of minor fevers and actually also had the highest weekly record in the camp—namely, 4.5 per 1,000—also had one case of paralytic poliomyelitis. In other units producing paralytic cases the incidence of minor fevers was between these extremes, and two large units with relatively high instances of minor fever had no cases of poliomyelitis and no suspected cases.

Thus it would appear that these minor fevers were not related to the transmission of poliomyelitis. But as five of the paralytic patients were indisposed for a week before finding it necessary to seek medical advice it is possible that similar cases of indisposition were widespread and unrecognized; or, alternatively as postulated by McFarlan, Dick, and Seddon (1946), apparently healthy males can act as carriers of the epidemic.

Only one case (P5) and no suspected case occurred among the 1,612 children in the camp area. Preliminary reports of the English epidemic of 1947 (McAlpine, 1947) suggest that approximately 20% of notifications have been of patients over 15 years of age; even so, the disproportion is probably significant.

Three of the young soldiers developing paralytic poliomyelitis came from professional or middle-class families and two were from superior artisan families. Bernstein, Clark, and Tunbridge (1945), observing the same phenomenon among Service personnel in Malta, postulated that these classes had been more sheltered from the virus of poliomyelitis in their youth and hence were more susceptible. The young soldiers in Catterick were certainly in closer contact as a group and had more outside contacts than the children.

It may be stated that during the period June to October there were extremely few flies or other insects in the camp. The sanitation was good and intestinal diseases, apart from a very small epidemic of mild gastro-enteritis in September and October, were absent.

I wish to thank Col. H. C. Godding, Officer Commanding the Military Hospital, Catterick Camp, for permission to publish; Brigadier G. H. Gilmore, District Army Welfare Officer, Catterick

Camp, for the census of quarters in that camp; Major J. B. Harrower, S.M.O., Catterick Camp, and the medical officers under his command for early reference of cases and information about minor feverish illnesses; Major R. Wigglesworth, Lieut.-Col. R. Kempthorne, Capt. J. R. Edge, and Lieut. P. Venables for help in the care of patients and careful notes; Captain Bernstock for examining the pathological specimens; and Staff Sgt. L. Pitchfork and Privates J. E. Forrester and G. McGarry for numerous routine inquiries and help in preparing the tables.

REFERENCES

Andelman, M. B., Fishbein, W. I., Casey, A. E., and Bundesen, H. N. (1946). *Sth. med. J.*, **39**, 706.
Aycock, W. L., and Kessel, J. F. (1943). *Amer. J. med. Sci.*, **205**, 454.
Bernstein, N. G. G., Clark, J. M. P., and Tunbridge, R. E. (1945). *British Medical Journal*, **1**, 763.
Casey, A. E. (1942). *Science*, **95**, 359.
—— Fishbein, W. I., Abrams, I., and Bundesen, H. N. (1946). *Amer. J. Dis. Child.*, **72**, 661.
McAlpine, D. (1945). *Lancet*, **2**, 130.
—— (1947). *British Medical Journal*, **2**, 668.
McFarlan, A. M., Dick, G. W. A., and Seddon, N. J. (1946). *Quart. J. Med.*, n.s. **15**, 183.
Memo. by Medical Officers to Ministry of Health (1947). *British Medical Journal*, **2**, 141.
Russell, W. Ritchie (1947). Ibid., **2**, 1023.
Warin, J. F. (1947). *Lancet*, **2**, 594.

ABERRANT ENDOMETRIAL TISSUE AND INTUSSUSCEPTION

BY

E. M. SOUTHERN, M.R.C.S., D.R.C.O.G.
Late Resident Obstetrical Officer, St. Mary Islington Hospital

Intussusception of the ileo-colic variety in an adult, with aberrant endometrial tissue at the apex of the entering ileum, is an unusual occurrence. V. B. Green-Armytage (1933) reports that a state of pelvic endometriosis existed in 8.9% of a series of 1,000 abdominal operation cases. Most instances in which aberrant endometrial tissue has been found to involve the peritoneal surface of the intestine are reported in locations about the sigmoid colon and recto-vaginal septum. Thierstein and Allen (1946) report 53 cases of intestinal endometriosis. Their series is subdivided into two groups: (1) 41 cases in which the endometriosis involved the rectum and recto-vaginal septum, and (2) 12 cases in which the lesions were found higher in the intestinal tract. The second group consisted of 6 cases of involvement of the sigmoid colon, 3 of caecal involvement, 1 of endometriosis of the ileum, and 2 of lesions involving the appendix.

Relatively few cases of acute or chronic intestinal obstruction due to endometriosis have been recorded. Glenn and Thornton (1940) report two cases of partial intestinal obstruction of the chronic type due to endometrial tissue. A review of the literature revealed only four cases in which the tissue involved small bowel and produced complete intestinal obstruction. I cannot find a single reported case of intussusception with endometrial tissue as a causal factor.

The justification for recording this case lies, however, not only in its extreme rarity but in the pathological histology, in which there is some evidence in support of the serosal theory of endothelial metaplasia as a factor in the origin of aberrant endometrial tissue.

Case Report

A single woman aged 23 was admitted on July 9, 1947. A year previously, while serving in the W.A.A.F., she had complained of attacks of diarrhoea and vomiting, and a diagnosis of acute food-poisoning had been made. Menstruation had started at the age of 14. The flow was moderate, lasting from five to six days; the cycle was between 27 and 30 days. There had been severe dysmenorrhoea since the menarche, often sufficient to confine the patient to her bed, and the pain had always been associated with vomiting on the first day of the period. There was no history of pregnancy or abortion.

Three months before admission she had complained of several attacks of sharp colicky pain in the lower abdomen, more pronounced in the right iliac fossa. These attacks recurred at irregular intervals of about three weeks and lasted on each occasion for about half an hour. They had recently become more frequent and prolonged, and seemed to be clearly associated with the menstrual periods. The pain had not been relieved by sedation or antispasmodic drugs. The patient vomited during the attacks, but no nausea or vomiting occurred in the periods of intermission. The appetite was consistently poor. On two occasions there had been some diarrhoea (four or five semi-solid stools a day), but at no time was there any blood-stained discharge in the stools. The first day of the last menstrual period was 11 days before admission.

The patient was thin, lacrimose, and miserable, and was in severe pain, drawing up her legs and constantly retching and vomiting. The pulse was rapid, but regular and of good volume. The temperature was 98.6° F. (37° C.). The abdomen was uniformly tender and there was some guarding of the abdominal musculature. An oval sausage-shaped swelling was seen in the right iliac fossa. The swelling was semi-fluctuant, soft, and mobile. The white blood cells numbered 14,500 (polymorphs 80%, lymphocytes 10%).

The external genitalia were normal. The cervix and uterus were of normal size, shape, and position. A cystic swelling was palpable from the right fornix. This was distinctly felt as separate from the uterus. The mass was tender. Rectal examination confirmed the presence of a pelvic mass. Amongst the possibilities that had to be considered at this stage were appendicular abscess, Crohn's disease, pyosalpinx, extrauterine gestation, rotation of the pedicle of an ovarian tumour, and obstruction from bands or internal hernia.

Operation (July 9).—Under anaesthesia the mass felt like an appendix abscess. A McBurney incision revealed an intussusception of the ileo-colic variety, extending half-way up the ascending colon, which had to be delivered by a separate right paramedian incision. All attempts at reduction failed. A hemicolectomy was performed and an end-to-end anastomosis of the ileum to the transverse colon was carried out. Both ovaries appeared normal at operation and there was no evidence of pelvic endometriosis.

The patient made an uneventful recovery and was discharged symptom-free on July 29. On Sept. 17 she was found to be well, and the two periods since operation had passed without pain or vomiting.

Pathological Report

The specimen consisted of the resected portion of the terminal ileum, which was intussuscepted into the ascending colon (Fig. 1). The ensheathing and returning tubes had been laid open. For microscopical sections a piece was cut from the ileum at the apex of the intussusception.

Microscopical Description.—Section of the ileum (Fig. 2) showed congestion of the mucosa and submucosa and some necrosis of the mucosa. In the muscularis there were small areas of typical endometrium, composed of glands lined with tall columnar cells in an abundant stroma that was characteristic of endometrial stroma (Fig. 3), but the unusual and interesting feature in this section was that on and underneath the serosa, at the terminal tip of the intussusception and exactly opposite the intramuscular area of endometrium, there was an area showing a most unusual degree of hyperplasia of the peritoneal endothelial cells (Fig. 4). Here the cells were cuboidal, and were arranged to form branching tubules of varying size, giving the appearance of an adenoma. Proliferations of peritoneal endothelial cells, with resulting tubular and cystic peritoneal inclusions, are common in chronic pelvic inflammation, but are very rarely found to the degree shown in this section. The appearance therefore suggested the possibility that this area of peritoneal hyperplasia was an early stage in the metaplasia of peritoneal cells into "endometrial" glandular elements. Further, at a point between the endothelial tubules, areas of

typical endometrial stroma might be seen. The picture produced was thus one of invagination of the serosa with accompanying stromal changes.

Discussion

The presence of aberrant endometrial tissue in certain conditions of the ovary was recognized by Russell in 1899

FIG. 1.—Resected specimen of ileo-colic intussusception. (A) Apex of ileum with endometrial tissue.

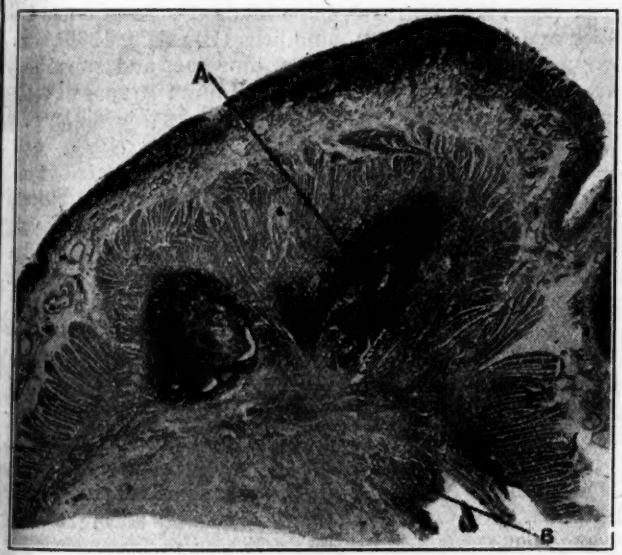


FIG. 2.—Section cut from apex of the entering ileum, with (A) area of endometrial tissue and (B) area of hyperplasia of peritoneal endothelial cells. (×5.)

and yet the histogenesis of endometriosis is not completely explained. J. A. Sampson (1921) maintained that these lesions were due to implantations of the living endometrial cells over the surface of the peritoneum of the ovary, etc. These cells were supposed to be cast into the cavity of the uterus during menstruation, passed along the Fallopian tubes, and finally settled at the site of the future lesion. Sampson has produced a great deal of evidence in support of this theory, and yet many objections to the general application of his views have been raised.

Emil Novak (1926) mentions the following: (1) Though retrograde menstruation may occur, it is a rarely observed phenomenon compared with the great frequency of endometriosis. (2) It is difficult to believe that endometrium thrown off in the uterus could enter the small orifice of the tube, travel outwards, and still be capable of implanting itself and growing upon the pelvic structures. (3) Endometrium thrown off at menstruation is already degenerated or dead, so that it is not easy to conceive of it taking root in the peritoneum. (4) Experiments such as those of Jacobsen (1922), showing that endometrium can grow in the peritoneum, have dealt with the normal healthy endometrium of animals. (5) Experiments such as those of Heim (1929), in monkeys, in which a utero-abdominal fistula was created, have failed to show any development of endometrium, in spite of the fact that the menstrual blood was emptied freely into the abdomen.

FIG. 3.—Aberrant endometrial glands with abundant endometrial stroma within the muscularis of the ileum. (×182.)

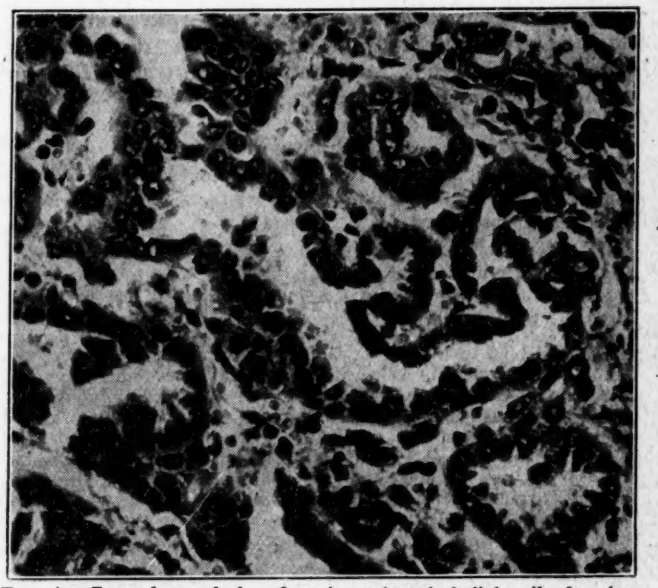


FIG. 4.—Great hyperplasia of peritoneal endothelial cells forming tubules, suggestive of an early stage of metaplasia. (×350.)

It was suggested by Iwanoff (1898), and supported by Meyer and Kitai (1924), that the origin of the aberrant endometrial tissue was a serosal metaplasia. This was based on the fact that the entire epithelial apparatus of the female genital tract (endometrium, germinal epithelium of the surface of the ovary, etc.) is derived from the primitive coelomic epithelium of the urogenital fold and is a mere modification of the peritoneum. According to this theory, under the influence of ovarian hormonal stimulation the pelvic peritoneum forms tubular invaginations which sink into the subjacent tissue, and the flat endothelium of the involved peritoneum becomes columnar, thus producing an adenomatous condition.

The hypothesis of serosal metaplasia has received influential support, especially for the endometrial cysts of the ovary and endometriosis of the umbilicus, laparotomy scars, uterine ligaments, intestine, and recto-vaginal septum.

An explanation of the stimulus of metaplasia may be found, in the above case, in a study of the behaviour of epithelium in the presence of inflammation. Inflammation beneath a mucous or serous surface produces an infiltrative proliferation in the adjacent epithelium. This epithelial proliferation is at first a protective process, but it can overstep the limit of physiological hyperplasia by producing epithelial tubules which have all the appearances of glandular invasion. Peritoneal endothelium behaves in the same way, and in the present case, in which a chronic intussusception probably gave rise to such a stimulus, the glandular elements are seen to reproduce the exact structure of normal endometrial glands and stimulate a surrounding stroma which is an exact replica of endometrial stroma. Furthermore, these areas of typical endometrial tissue are seen in the sections to lie in immediate apposition to the hyperplastic tubules which are shown to be derived from the peritoneal endothelium.

It would seem that reversions of the epithelium under inflammatory, and perhaps ovarian, stimuli are possible in the adult peritoneum, and that the embryonic cells can reproduce endometrial structure.

Summary

A case of intussusception, with tissue showing all the appearances of endometrium situated at the apex of the entering ileum, is presented.

The microscopical appearances are suggestive of a metaplastic origin of the endometrial tissue and may be held to support the observations of Meyer and Kitai (1924), Novak (1926, 1947), Moench (1929), and others.

* I am indebted to Mr. G. C. Dorling, surgical specialist, Archway Group of Hospitals, for help with the clinical notes and for permission to publish the case, and to Miss K. M. Harding, consultant obstetrician and gynaecologist, Archway Group of Hospitals, under whose care the case was admitted. I should like to thank Mr. Moore, of the Central Histological Laboratory, Archway Hospital, and Mr. King, of the Bernhard Baron Pathological Institute, London Hospital, for the photomicrographs.

BIBLIOGRAPHY

Gale, C. (1931). *Aust. N.Z. J. Surg.*, **1**, 323.
Glenn, P. M., and Thornton, J. J. (1940). *J. Amer. med. Ass.*, **115**, 520.
Goodwin, W. H. (1934). *Va. med. Mon.*, **61**, 257.
Green-Armytage, V. B. (1933). *British Medical Journal*, **1**, 602.
Heim, K. (1929). *Mschr. Geburtsh. Gynäk.*, **105**, Beiheft No. 2.
Iwanoff, N. S. (1898). *Mschr. Geburtsh. Gynäk.*, **7**, 295.
Jacobsen, V. V. (1922). *Arch. Surg.*, **5**, 281.
Meyer, R., and Kitai, I. (1924). *Zbl. Gynäk.*, **48**, 2449.
Moench, G. L. (1929). *Surg. Gynec. Obstet.*, **49**, 332.
Mouat, T. B. (1926). *Brit. J. Surg.*, **14**, 76.
Novak, E. (1926). *Amer. J. Obstet. Gynec.*, **12**, 484.
—— (1947). *Gynaecological and Obstetrical Pathology*, 2nd ed., p. 473. Philadelphia.
Russell, W. W. (1899). *Bull. Johns Hopk. Hosp.*, **10**, 8.
Sampson, J. A. (1921). *Arch. Surg.*, **3**, 245.
Starr, F. N. G. (1929). Ibid., **19**, 152.
Thierstein, S. T., and Allen, E. (1946). *Amer. J. Obstet. Gynec.*, **51**, 635.

NEONATAL BACT. COLI MENINGITIS AFTER PROLONGED LABOUR

BY

H. R. DUVAL, M.D., C.M., F.R.C.S., M.R.C.O.G.

Consultant Obstetric and Gynaecological Surgeon, Coventry and Warwickshire Hospital

AND

J. T. BURROWES, M.A., B.M., B.Ch., M.R.C.O.G.

Registrar, Department of Obstetrics and Gynaecology, Coventry and Warwickshire Hospital

It is well known that *Bacterium coli* meningitis is relatively commoner in the newborn than in childhood or later life (Barron, 1918; Cruickshank, 1930; Craig, 1936; Rauch and Krinsky, 1940; Barrett *et al.*, 1942). The explanation given is that the newborn infant has not developed adequate resistance against the organism, although in later life it carries the same organism about in large numbers in relative safety (Cooke and Bell, 1922).

The route taken by the infecting organism has been the subject of some speculation, and numerous suggestions have been made. It is generally agreed, however, that the meninges are more commonly infected via the blood stream than by direct spread from adjacent areas. To support this contention Fothergill and Sweet (1933) demonstrated a *Bact. coli* bacteriaemia at the same time that *Bact. coli* were found in the cerebrospinal fluid.

The original portal of entry is difficult to determine, but the large number of suggestions made, incriminating widely separated sources, indicate that infection may enter at any of many sites. The following portals of entry have been mentioned: middle ear (Scherer, 1894; Barron, 1918; Leathart, 1932; Craig, 1936), gut (Cooke and Bell, 1922; Barrett *et al.*, 1942; Ravid, 1935), lungs (Aschoff, 1897; Goldreich, 1902; Herrman, 1915), genito-urinary tract (Neal, 1926; Koplik, 1916), spina bifida (Forbes, quoted by Rauch and Krinsky, 1940), umbilicus (Hinsdale, 1899), and morbid conditions of skin, scalp, mucosae, and subcutaneous tissues (Craig, 1936). In addition transplacental bacteriaemia, possibly arising from maternal pyelitis, has been suggested by Jahkola (1935), Karplus (1927), and Athenstaedt (1933). Aspiration of liquor infected with *Bact. coli*, causing a bronchopneumonia followed by bloodstream spread to the meninges, was suggested by Goldreich in his case. Aschoff held similar views. And, it might be noted, F. J. Browne (1921) considers aspiration of infected liquor a cause of bronchopneumonia.

In the following case it would seem that this was also the method and route of infection. The foetal head lay in the maternal pelvis, deeply engaged, for at least four days, and during the latter two days the cervix was between half and full dilatation. Further, both mother and child showed clinical signs of infection three days after delivery —the mother with *Bact. coli* pyelitis and endometritis and the child with fatal *Bact. coli* meningitis and bronchopneumonia.

Some previous cases have been reported in which the same organism was found in the maternal urine and lochia as was found in the child's cerebrospinal fluid (Jahkola, 1935; Trillat and Notter, 1939; Davis and Fernando, 1935).

Case History

A primipara aged 25 had labour surgically induced by a Drew Smythe catheter when 38 weeks pregnant. The indication was pre-eclamptic toxaemia with a rising blood pressure.

Labour started next day, but it was soon clear that primary uterine inertia existed. Four days later she had two eclamptic fits. She was then given 1/4 gr. (16 mg.) of morphine and sent into hospital.

On admission at 6 a.m. on Aug. 28, 1947, treatment based on Stroganoff's principles was immediately started. In the first 24 hours she received 1¼ gr. (81 mg.) of morphine and 6 gr. (0.4 g.) of sodium phenobarbitone. She had a fit when being put to bed and another two hours later, but the rest of the day she passed in a semicomatose condition. The foetus was small, with its head deeply engaged in the maternal pelvis. There were no uterine contractions at this stage and the foetal heart was easily audible.

The patient slept deeply throughout Aug. 29. Only 1/6 gr. (11 mg.) of morphine was given. A specimen of urine showed: specific gravity, 1010; alkaline reaction; albumin, 0.6%; sugar, *nil*; scanty pus cells; a few granular and hyaline casts; sterile culture. At 2.30 a.m. on Aug. 30 the cervix was fully dilated, and at 4 a.m. the child, a female, was delivered by forceps. It was somewhat narcotized, but breathed and cried satisfactorily after receiving 1.7 ml. of nikethamide and 10 mg. of vitamin K intramuscularly. Both mother and child were as well as could be expected for the remainder of the day and throughout the following day.

On Sept. 1 the mother's temperature rose to 100.4° F. (38° C.) and clinical examination suggested acute pyelitis and endometritis. A catheter specimen of urine showed: specific gravity, 1024; strongly acid reaction; albumin, 0.85%; sugar, *nil*; few pus cells, numerous organisms; many granular and fatty casts; crystals, *nil*; culture, coliform bacilli. A high vaginal swab showed: direct smear—scanty pus cells, many coliform bacilli; culture, coliform bacilli. Penicillin and sulphadiazine therapy was instituted, and after 24 hours she was apyrexial. The remainder of the puerperium was uneventful.

The Child

At birth the child was given nikethamide and vitamin K and was not disturbed except to be given feeds of glucose-water during the first 48 hours of its life. On the morning of the third day the child was fretful and restless and refused its feed of water. Some stiffness of the neck and head retraction were noticed. The temperature was 100° F. (37.8° C.). Cerebral haemorrhage was suspected, and vitamin K and 1 gr. (65 mg.) of chloral were given.

The child's condition deteriorated. It developed twitchings of the face and limbs, nystagmus, and, later, convulsions which became more frequent until they were almost continuous. Head retraction became more marked and the child vomited once, bringing up blood-stained fluid. Sodium phenobarbitone, 1/8 gr. (8 mg.), had no apparent effect.

Before death occurred moist sounds and patchy consolidation at the bases of the lungs were noted and penicillin, 100,000 units, was given. But the child became progressively dyspnoeic and cyanosed, and died at 6.20 p.m. on Sept. 1.

Post-mortem Report.—"External: post-mortem lividity is very marked. Head: Skull-cap and dura mater are normal; there is no evidence of injury to the brain substance or venous sinuses, but there is a well-marked acute purulent meningitis over the base of the brain. Thorax: The pericardial sac contains a large excess of clear yellow fluid; myocardium shows marked toxic changes; pleural sacs are dry; a copious fibrino-purulent exudate is present over the lower lobes of both lungs, and these show bronchopneumonic consolidation. Abdomen: The peritoneal sac is normal; liver, spleen, and kidneys show toxic changes; other organs show nothing of note. Cause of death: Acute purulent meningitis; bronchopneumonia. Culture of pus from the base of the brain grew coliform bacilli, and biochemical investigations gave typical reaction of coliform bacilli of intestinal origin."

Discussion

When the membranes are ruptured the way is open for the liquor amnii and the uterine cavity to become infected. This we know to be rare in normal labour or where the induction–delivery interval is short. But when there is delay in the onset of labour or a prolongation from any cause infection of the liquor becomes an important consideration. And the longer labour continues, with or without vaginal examinations, the greater the degree of infection.

Eventually the liquor becomes frankly purulent and may lead to pyrexia and other signs of toxic absorption in the mother. The risks of caesarean section are greatly enhanced by the possibility of peritoneal and wound infection. At the same time the foetus is surrounded by a septic fluid which enters the mouth, the nose, the nasopharynx, and remains there to be inhaled into the lungs at the child's first breath, or to track down the Eustachian tubes to the middle ear.

Davis and Potter (1946) injected thorotrast into the amniotic fluid before hysterotomy or caesarean section and found it widely distributed throughout the lung fields of the foetuses. Even if this does not prove that intrauterine respiration occurs, it does indicate that amniotic fluid enters the lungs of the foetus, and if the fluid is infected serious disease of the foetus may be set up *in utero*—e.g., bronchopneumonia.

Bact. coli is one of the commonest of the bacteria likely to be present in such a situation, and it is not surprising that this organism is responsible for the majority of meningeal infections in the newborn.

Instrumental delivery, with more or less vaginal manipulation and trauma, is relatively often required to terminate a prolonged labour, and this will nearly always produce minor abrasions and bruises on the child's scalp, which will be immediately subject to infection. Further, the child in such cases is likely to be born with some degree of cerebral oedema and congestion associated with atelectasis, which in turn favours lung infections.

The possibility of serious neonatal infection must therefore be considered in the management of prolonged labour. And where there is evidence of intrauterine infection, either in the shape of a maternal pyrexia without other cause or in the discharge of purulent liquor from the vagina, chemotherapy should be started, and the case assessed with a view to the earliest possible termination of labour. Woltz and Zintel (1945) have demonstrated that penicillin reaches the foetal blood and the liquor in adequate therapeutic quantities, and recommend its use prophylactically in cases of uterine inertia or unduly protracted labour.

Diagnosis and Treatment.—The diagnosis and treatment of *Bact. coli* meningitis is the province of the paediatrician, but it might be stressed that after a prolonged labour the attendant should be on the watch for early signs of infection of the child and chemotherapy should be started. Sulphapyridine, sulphadiazine, and sulphathiazole alone or in combination with penicillin have been recommended, and Alexander (1946) has had success with streptomycin in one case. Diagnosis is difficult, and it is usually necessary to examine the cerebrospinal fluid in order to differentiate between cerebral haemorrhage and meningitis.

Summary

A short review of the literature is made with particular reference to the portals of entry of *Bact. coli* infection which leads to *Bact. coli* meningitis in the newborn.

The history of a fatal case of *Bact. coli* meningitis in an infant 3 days old is given. The mother had intra-partum eclampsia and prolonged labour, and on the third day of the puerperium developed *Bact. coli* pyelitis and endometritis.

The dangers of prolonged labour, from the point of view of the child, are stressed.

We wish to express our thanks to Dr. A. F. Wright, Director of the Coventry Joint Laboratory, for assistance and advice, for reporting on the specimens provided, and for carrying out the post-mortem examination.

REFERENCES

Alexander, A. J. (1946). *J. Amer. med. Ass.*, **131**, 663.
Aschoff, L. (1897). *Z. Ohrenheilk.*, **31**, 295.
Athenstaedt, F. (1933). *Zlb. Gynäk.*, **47**, 2302.
Barrett, G. S., Rammelkamp, C. H., and Worcester, J. (1942). *Amer. J. Dis. Child.*, **63**, 41.
Barron, M. (1918). *Amer. J. med. Sci.*, **156**, 358.
Browne, F. J. (1921). *Edinb. med. J.*, **27**, 153.
Cooke, J. V., and Bell, H. H. (1922). *Amer. J. Dis. Child.*, **24**, 387.
Craig, W. S. (1936). *Arch. Dis. Childh.*, **2**, 171.
Cruickshank, J. N. (1930). *Spec. Rep. Ser. med. Res. Coun., Lond.*, No. 145.
Davis, L. J., and Fernando, F. S. (1935). *Trans. R. Soc. trop. Med. Hyg.*, **29**, 143
Davis, M. E., and Potter, E. L. (1946). *J. Amer. med. Ass.*, **131**, 1194.
Fothergill, L. D., and Sweet, L. K. (1933). *J. Pediat.*, **2**, 696.
Goldreich, W. (1902). *Jhrb. Kinderheilk.*, **56**, 808. Quoted by Barron (1918).
Herrman, C. (1915). *Arch. Pediat.*, **32**, 384.
Hinsdale, G. (1899). *Amer. J. med. Sci.*, **118**, 280.
Jahkola, A. (1935). *Acta Soc. Med., "Duodecim,"* **23**, 1.
Karplus, D. (1927). *Wien. klin. Wschr.*, **40**, 250.
Koplik, H. (1916). *Arch. Pediat.*, **33**, 481.
Leathart, P. W. (1932). *British Medical Journal*, **2**, 691.
Neal, J. B. (1926). *Amer. J. med. Sci.*, **172**, 740.
Rauch, S., and Krinsky, N. (1940). *Amer. J. Dis. Child.*, **60**, 1386.
Ravid, J. M. (1935). Ibid., **49**, 1282.
Scherer, F. (1894). *Jhrb. Kinderheilk.*, **39**, 1.
Trillat, P., and Notter (1939). *Lyon méd.*, **163**, 624.
Woltz. J. H. E., and Zintel, H. A. (1945). *Amer. J. Obstet. Gynec.*, **50**, 338.

CERVICAL SYMPATHETIC PARALYSIS

BY

J. DONALDSON CRAIG, M.D., M.R.C.P.

Research Fellow, Medical Unit, St. Mary's Hospital; Late Squadron-Leader, Medical Specialist, R.A.F.V.R.

AND

R. C. FULLER, M.B., F.R.C.S.

Extra Surgical Registrar, St. Mary's Hospital; Late Squadron-Leader, R.A.F.V.R

The effects of unilateral paralysis of the cervical sympathetic chain, almost invariably referred to in standard textbooks as Horner's syndrome, are generally given as ptosis, enophthalmos, pupillary constriction, and anidrosis of the face on the affected side. This description of the syndrome not only is inaccurate and incomplete but differs from that published in 1869 by Horner himself. Further, accounts of sympathetic paralysis were published by many earlier workers, and it therefore seems justifiable to review the whole status of the eponym.

Historical

Pourfour du Petit (1727) recognized that injury to the sympathetic chain in the neck could cause pupillary changes. In many domestic animals he noted myosis and partial closure of the third eyelid at the inner canthus. His results were confirmed by Mollinelli in 1755 and by many others. Similar effects after section of the trigeminal nerve near the Gasserian ganglion were observed by Fodera (1823), Magendie (1824), and Sir Charles Bell.

Budge and Waller in 1841 demonstrated that the sympathetic supply to the iris has its origin in the anterior and middle columns of the spinal cord from the sixth cervical to the fourth thoracic segment, passing via the spinal nerves to the cervical sympathetic chain and thence to the first division of the trigeminal nerve. Brown-Séquard and Bernard in 1854 noted that section of the sympathetic chain caused pupillary contraction, closure of the eyelids, and increased vascularity and temperature on the affected side, all these changes being reversed by galvanic stimulation of the upper divided end of the nerve.

Despite all these observations, clinical descriptions of such conditions occurring in the course of natural diseases do not appear in the earlier literature. In 1809 Sir Astley Cooper, in a case of aneurysm of the internal carotid artery, noted ptosis on the affected side together with "a feeling of hot and cold in the ear." He did not record whether or not these signs disappeared after he had cured the aneurysm by ligation of the common carotid artery, nor did he remark on the state of the pupils, an omission which is understandable when it is realized that the pupillary constriction of opium-poisoning was not recognized until Kinnis described it in 1818. Coates, in 1822, recorded a case in which successful ligation of the common carotid artery for an aneurysm was followed by restoration to normal of a pupil which had been markedly constricted. Sir Benjamin Brodie (1828) noted bilateral pupillary constriction in a man with fracture-dislocation of the cervico-dorsal spine. Willebrandt (1854) recorded similar pupillary constriction in a case of cervical tumour, and Gairdner (1855) described an instance of aortic aneurysm accompanied by eye changes which he rightly regarded as similar to those produced experimentally by section of the cervical sympathetic chain.

Notwithstanding the value of these earlier contributions it is probable that much of the credit for the clinical evaluation of the syndrome produced by cervical sympathetic paralysis should be accorded to J. W. Ogle, physician to St. George's Hospital, London. In his carefully reasoned publication (Ogle, 1858) he pointed out some of the fallacies in the application to man of the results of animal experiments, summarized the previous literature, and collected and reviewed a series of 27 cases. In these, unilateral myosis and ptosis were sometimes associated with vascular and temperature changes, and the interference with the cervical sympathetic chain was the result of intrathoracic aneurysms, cervical lymphadenopathy, or spinal injury. He recorded one case in which an acute abscess of the neck was accompanied by dilatation of the pupil, which returned to normal after incision of the abscess. The role of the cervical sympathetic seems to have been well recognized by this time. Weir Mitchell *et al.* (1864) described a patient in whom a gunshot wound of the neck was followed by unilateral pupillary constriction, narrowing of the palpebral fissure, and very pronounced vasodilatation of the corresponding side of the face and neck, ending abruptly at the midline. These changes were confidently ascribed to injury of the cervical sympathetic chain.

The Work of Horner

Horner (1869) based his observations on one case, that of a woman aged 40, who, six weeks after parturition, developed right-sided myosis, ptosis, and diminished ocular tension without evidence of eye disease or of trigeminal paralysis. Although remarking that some slight enophthalmos was present, Horner regarded this as of little importance, concentrating more on the study of the vascular effects. He noted that the affected side of the face was redder and distinctly warmer than the other and that it did not perspire. He measured the temperature on both sides of the face, finding a difference of 5 ° C. under normal conditions. Bandaging the face resulted in an increase in temperature on the normal side so that the difference was reduced to about 1 ° C. The vasodilatation of the face when warmer was, he noted, accompanied by a corresponding dilatation of the retinal veins. Atropine enlarged the pupil but slowly, irregularly, and to a lesser extent than on the normal side. Although recognizing that cervical sympathetic paralysis was the cause of the signs he expressed no views as to the fundamental pathology of the condition.

Horner's work appears to have stimulated his associate Nicati (1873), whose observations are remarkable for their anticipation of much of the modern view of the control of the blood vessels of the skin. He distinguished three stages in the development of the paralysis. In the first he considered that the encroachment of the lesion might produce stimulation of sympathetic activity as shown by hyperidrosis of the affected side of the face. Such changes might be found, for example, in cases of cervical abscess, the face returning to normal after this was incised. The second stage, that of early paralysis, he found to be characterized by unilateral myosis, ptosis, enophthalmos, anidrosis, and lowered ocular tension, with flushing and increased warmth of the affected side of the face and neck. Measuring the temperature of the skin of the two sides of the face Nicati found the affected side constantly warmer. In particular, the temperature on the paralysed side did not fall appreciably on exposure to excessive cold and on return to warmer conditions it rose more quickly than on the normal side. In the third and final stage some atrophy and wasting followed. The affected side, formerly highly coloured, was now paler. It was also cooler except when the vessels of the normal side were strongly contracted in response to excessive cold, when once again the diseased side became the warmer.

Of Nicati's 25 cases, 20 occurred in women. Although he enumerated the causes of the syndrome fairly completely he was unable to determine any underlying pathological condition in the majority of his own patients, some of whom continued in good health for many years. He fell into the trap of attempting to correlate the syndrome with the ocular changes occurring in exophthalmic goitre, suggesting that excessive sympathetic stimulation might be the *fons et origo* of both the exophthalmos and the thyrotoxicosis, but his arguments are speculative and unconvincing.

From that time onwards the term "Horner's syndrome" appears to have come into common usage to describe the effects of cervical sympathetic paralysis, although the origin of the term is not widely known and the original description little consulted.

Anatomy

The sympathetic nerves of the head and neck are derived from the spinal segments D1 and D2. The fibres supplying the pupil have their connector cells in lateral horn cells of these segments, pass into the anterior primary rami of the first two thoracic spinal nerves, and thence into the sympathetic chain to relay in the superior cervical ganglion. The excitor fibres pass thence along the coat of the internal carotid artery to the cavernous plexus, whence they may pass to the pupil by one of two routes: either entering the Gasserian ganglion and passing into the first division of the trigeminal nerve, thence into the long ciliary nerves and thus to the pupil; or entering the ciliary ganglion by its sympathetic route, passing through it without synapsing and reaching its pupil by the short ciliary nerves.

The centre for the sympathetic control of the pupil is in the superior corpus quadrigeminum, and the path from here to the spinal cord is believed to be in the tectospinal tract. This centre receives fibres from the optic nerve.

The vasomotor fibres of the skin of the face are distributed from the superior cervical ganglion along the branches of the external carotid artery. The vasomotor centre is in the calamus scriptorius in the floor of the fourth ventricle, from which fibres pass to the connector cells of the sympathetic in the lateral horn of grey matter.

The levator palpebrae superioris muscle is supplied by the third cranial nerve through its upper branch. This, however, supplies only striped muscle, and the ptosis which occurs in cervical sympathetic paralysis is due to interruption of the sympathetic nerve supply to the smooth muscle of the upper and lower eyelids called, respectively, the upper and lower tarsal muscles (of Müller).

A certain amount of misunderstanding has centred upon the subject of Müller's muscle. This term has been applied to the tarsal (or palpebral) muscle described above, and to the orbital muscle of Müller. The latter is a collection of plain muscle arising from the periorbita, bridging the inferior orbital fissure and radiating in a thin layer over the orbital floor. It is variable in size, and is the vestigial remnant of the muscular membrane completing the lateral wall of the orbit in those lower animals in which this does not consist of bone. In certain of these animals it acts as a protruder of the eye (Müller, 1858). In man, stimulation of the sympathetic does not produce protrusion of the eye (Turner, 1862), although this muscle is supplied by the sympathetic. It is difficult to see how this structure can have any notable effect on the position of the eyeball in man.

Pathology

Consideration of these anatomical facts makes it clear that the syndrome may be produced in several ways—namely, (1) by brain-stem lesions, notably thrombosis of the posterior-inferior cerebellar artery; (2) by intramedullary cord lesions at or above the level of D1—if at D1 there will also be wasting of the small muscles of the hand; (3) by extramedullary spinal lesions such as trauma and neoplasm; (4) by lesions involving the peripheral course of sympathetic fibres, such as trauma, aneurysm of the aorta or carotid vessels, or neoplasm in the neck or superior mediastinum; and (5) it also occurs in the rare condition of partial facial hemiatrophy (Parry–Romberg syndrome), the causation of which is as yet imperfectly understood.

The Clinical Syndrome

Whatever the site of the lesion the obvious clinical syndrome is fairly constant. The stage of stimulation described by Nicati is rarely, if ever, seen in present clinical practice, but should be borne in mind as a possible source of confusion in diagnosis.

1. *Myosis.*—This constantly occurs. Although the pupil is small the light reflexes are still present. The pupil does not dilate under cocaine, and the reaction to atropine is slow, irregular, and incomplete. This myosis is greater in lesions involving the superior cervical ganglion than in those arising more centrally.

2. *Narrowing of the Palpebral Fissure due to Descent of the Upper Lid and Raising of the Lower Lid.*—Horner, in his original description, remarked that the degree of enophthalmos was trivial, but in almost every current description enophthalmos is described as a cardinal feature. This is unjustifiable. The apparent enophthalmos is an optical illusion arising from the narrowing of the palpebral fissure. Actual measurements by Pochin (1939) have shown that sympathetic paralysis produces no immediate enopthalmos, such as might be produced by muscular paralysis. Only in long-standing cases is there a very slight degree of recession, of the order of 1 mm. Pochin has also shown the essential difference of the lid retraction produced by sympathetic stimulation and that occurring in Graves's disease. The lower eyelid is lowered in sympathetic stimulation but raised relative to the cornea when the upper lid is retracted by levator palpebrae spasm or Graves's disease. The true exophthalmos occurring in Graves's disease tends to give a false impression of the position of the lower lid. Pochin accordingly rejects the theories of earlier workers that the lid retraction in Graves's disease results from sympathetic overactivity.

3. *Other Eye Changes.*—Hypotonia, depigmentation of the iris, and cataract may occur.

4. *Anidrosis.*—Although the sweat glands are cholinergic they are innervated by the sympathetic, and therefore interference with function will be more or less complete according to the extent of the lesion. This affection is confined to one side of the face, stopping at the midline.

5. *Vascular Changes.*—These are variable, depending to some extent upon the degree of completeness of the paralysis, the rapidity of onset, and the presence of other vascular lesions, especially aneurysm or arteriosclerosis, the latter of which may prevent full dilatation. It is seldom that circulatory changes are as prominent a feature of the syndrome as are the eye changes. Where the lesion is of rapid onset, as in Weir Mitchell's case, loss of sympathetic tone may be followed by vasodilatation persisting even on exposure to cold. The vasodilator fibres, too, are involved, and on exposure to excessive warmth the normal side will show fuller dilatation than the other. But with the passage of time compensatory mechanisms are brought into play, the arteries and arterioles regaining some of their lost tone, so that actual pallor may develop, or the vessels may remain in a permanent state of incomplete relaxation. It is not true to say that the paralysed side is always warmer than the normal, although this is so under the usual environmental conditions of temperate climates. The temperature tends to remain relatively constant, failing to show the normal wide variations that follow those alterations in vasomotor tone which ordinarily result from fluctuations in surrounding temperature.

6. Some degree of facial hemiatrophy may occur in established cases, although this is never so pronounced as in the Parry–Romberg syndrome.

Summary

The inadequacy of many current accounts of the effects of cervical sympathetic paralysis is noted.

The history of the condition is reviewed, with particular reference to Horner's original account.

The anatomy, pathology, and clinical features of the syndrome are discussed.

As a result of this survey it is concluded that retention of the eponym "Horner's syndrome" is fully justified.

BIBLIOGRAPHY

Brinton, D. (1937). *Brit. Ency. med. Pract.*, **6**, 417.
Brodie, Sir Ben. (1828). *Med-chir. Rev.*, **9**, 410.
Brown-Séquard, C. E. (1864). *Mémoire à l'Académie des Sciences.*
Budge, J. (1852). *Arch. physiol. Heilk.*, **11**, 773.
Coates (1822). *Johnson's Medical Journal*, **2**, 870.
Charpy, A. (1912). Poirier's *Anatomie*, **2**, 539.
Cooper, Sir Astley (1809). *Med.-chir. Trans.*, **1**, 225.
Duke-Elder, W. S. (1942). *Textbook of Ophthalmology*, **1**, 174, 569. London.
Fodera, M. (1823). *J. Physiol. exp.*, **3**, 191.
Gairdner, W. T. (1855). *Mon. J. Med. Sci., Edinb.*, **20**, 71.
Horner, J. F. (1869). *Klin. Mbl. Augenheilk.*, **7**, 193.
Kinnis, J. (1818). *Edinb. med. surg. J.*, **14**, 603.
Lewis, Sir T. (1946). *Vascular Disorders of the Limbs.* London.
—— and Landis, E. M. (1929–31). *Heart*, **15**, 151.
Mitchell, S. Weir, Moorehouse, G. R., and Keen, W. W. (1864). *Gunshot Wounds and Other Injuries.* Philadelphia.
Müller, H. (1858). *Z. wisc. Zool.*, **9**, 541.
—— (1859). *Verhandl. phys-med. Ges. Wurzburg*, **9**, 244.
Müller, J. (1854). *Physiologie*, vol. 2, Coblenz.
Nicati, W. (1873). *La Paralysie du Nerf Sympathique Cervical.* Lausanne.
Ogle, J. W. (1858). *Med.-chir. Trans.*, **41**, 397.
Pochin, E. E. (1939). *Clin. Sci.*, **4**, 79.
Pourfour du Petit, F. (1727). *Mem. Acad. roy. Sci.*, **1**, 1.
Willebrandt, F. (1854). *Arch. Ophthal.*, **1**, 319.
Wright, Samson (1945). *Applied Physiology.* London.

Mr. Clement Shaw, chairman and managing director of T. C. Cornwell, Ltd., succeeds Mrs. Jean K. Irvine, M.B.E., as president of the Pharmaceutical Society of Great Britain. Mr. J. F. McNeal, of Amersham, has been elected vice-president and Mr. W. Spencer Howells, Richmond, re-elected treasurer.

DAY NURSERIES AND THE MAN-POWER PROBLEM

BY

W. E. CAVENAGH, B.Sc., D.P.A.

The writer of a leading article on day nurseries and industry (*British Medical Journal*, 1947, **1**, 644), after considering the results of recent research into the well-being of the children concerned, stated that the cost to the latter was such as cannot be justified except on grounds of overriding national economic need. He went on to say that if, as seemed to him probable, day nurseries consume as much or more labour than they free all basis for urging women to take up full-time work and leave their young children in a nursery disappears. This conclusion was partly based upon the Luton investigation made by F. Grundy in 1943.

There are really two questions to be considered: Do the day nurseries economize the use of woman-power?; and Does the economy, or the redistribution of labour involved, result in an increased supply of labour to work of national importance? The results of an investigation made in Birmingham in 1945 are interesting in this connexion.

During the whole of the war the labour shortage in Birmingham was such that a continual stream of men and women were moved from their homes in other parts of the country to work in Birmingham. At least 80,000 are actually recorded as having been brought in, placed, and billeted directly through the transfer and accommodation machinery set up by the Ministries of Labour and Health. Innumerable others drifted in on their own. This was the scale of the man-power problem which led to the setting up of 72 day nurseries and five 24-hour nurseries—the largest number of wartime nurseries set up by any local authority outside the L.C.C. The scheme was definitely intended as one of the alternative solutions to the problem of labour supply in the area.

The nurseries were almost continuously short of staff, and from 1942 the number opened lagged well behind the direct evidence of need shown by the long waiting-lists, but gradually the Child Care Reserve and other schemes for the training or retraining of staff, together with the working of the National Service Orders, did much to clarify and stabilize the position.

The Ministry of Health in a circular letter to local authorities in August, 1940, had suggested that one staff to every five children attending would be necessary, but this was found insufficient in Birmingham, where the nurseries were open from 7 a.m. to 8 p.m., to cover the long hours worked by many mothers, and the wide variety of starting and stopping times. A number of attempts were made to shorten nursery hours, but owing to the large number of small factories concerned—a feature of this area—this proved impossible, and as a result overlapping shifts were worked with a total ratio of one staff to every four children (rather more in the 24-hour nurseries).

In June, 1945, the Public Health Department drew up the following picture of the provision made:

Nurseries and the Children

Capacity	3,695	Under 2	1,215
Vacancies	223	Over 2	2,257
Children on register	3,472	Mothers on register	3,143

Employment of Mothers

Employment	Full-time	Part-time
Factory	1,448	169
Transport	100	6
Canteen and waitresses	277	30
Shop assistants	293	34
Domestic	234	64
Other work	432	56

In Birmingham not more than two children from one family were accepted, and the number of mothers (3,143) was very high as compared with the number of children (3,472). On the Birmingham ratio the staff used for this number was 868, and so there would be a release of about 2,275 mothers, or 3.6 for each member of staff.

But this figure does not give a realistic picture of the nurseries from the man-power aspect. Of the mothers 359 were part-time workers and may be considered as equal to only half their number of full-time people. Again, the actual attendance of children was on an average only about 75% capacity, representing proportionately fewer mothers. Moreover, mothers temporarily off work through sickness were still allowed to send their children to the nursery for a period not exceeding three weeks, and although it is not known what allowance should be made for this factor it is clear that not every child attending had a mother at work at the time.

On the staff side Public Health Department records show that there were about 140 other people directly employed—e.g., cleaners and others, mostly part-time but equal to at least 70 full-time people. Behind the staff directly attached to the nurseries there were the other people, such as the doctors who inspected all nurseries once a fortnight, the extra staff at central kitchens, and all those involved in the erection of huts, adaptations of houses, equipment, alterations, and repairs.

Each of the nurseries when fully staffed used three highly qualified people (nurses or nursery nurses), all in the short-supply category, plus nine to twelve others, according to the size of the nursery, and in estimating the man-power contribution this must be considered. The nurseries were not allowed to recruit staff between the ages of 18 and 30, but most of their workers could have done other forms of national work, although of course the 14-year-olds could not have been directed, and staff who had children of their own (sometimes accommodated in the nursery!) would also have been free from compulsion.

Since the issue of Circular 2388 by the Ministry of Health in May, 1941, it has been possible for *"the children of any woman who is in employment"* to use the nurseries, not only the children of women on work certified as essential to the war effort. As women with young children were not affected by the National Service Orders and were outside the Control of Employment Order they could offer their services to, and be engaged by, any employer without reference to the Ministry of Labour, and there was no control over the kind of work they did. The categories which from this angle might be regarded as doubtful are "shop assistants," "domestic," and "other work." These account for 959 mothers on full-time and 152 on part-time, being one-third of the total of mothers. Although doubtless many of the domestics were in hospital work, and the shop assistants in food shops, there exists here a factor which, if fully known, might still further affect the picture.

In relating wartime experience to present needs it must be remembered that these nurseries were set up against a background of labour controls and comparatively high earnings on national work. Married women generally are now free to work or not as they please, but these nursery schemes were aimed particularly at the mothers of young children, and the present sliding scale of charges, with the high maximum, while deterring the better-off mother encourages the poor one. There are long waiting-lists, and it is time that the general public asked themselves whether they are satisfied with a situation in which young mothers of the working classes are driven by economic necessity to work outside the home while married women generally and all women over 41 are free, and men work ever shorter hours.

During the war there was a rough check on the use of labour which was outside the controls in that, owing to the "vetting" operations of the District Man Power Offices, their engagement might result in the withdrawal of other employees. These powers have now practically disappeared. On the employees' side the cessation of munitions production has lowered earnings and reduced the financial attractions of national work as compared with other jobs. It is therefore less likely now than before that these mothers will be drawn towards work of high priority.

It is arguable that even during the war most of the mothers who placed their children in nurseries would have been working if the nurseries had never existed, as a great deal of paid minding at higher rates was known to have been going on in this area for years. Nurseries may simply have displaced minding in many cases by their extraordinary cheapness (6s. a week), the extra rations, and the long hours. Which form of child care was better for the children's welfare is quite another question, but since most of the minding was done by elderly relatives, not themselves in the labour market, any such displacement must actually have been detrimental to the labour supply situation.

One final point: since the withdrawal of the 100% grant by the Ministry of Health the charge per child has been raised to 18s. to cover the difference between the general grant aid received by the nurseries as part of the Maternity and Child Welfare provision by the authority and the actual cost, which is in the region of 35s. As the mother's payment is scaled according to her means, in some areas not more than half a dozen children in each nursery are being paid for at anything like the full charge, and the working of the scales is becoming a mounting burden on the rates. This expense may be more than justifiable looked at as a child welfare service, though even from that angle it would seem that allowances to necessitous mothers enabling them to look after their own children would probably serve the purpose more effectively. From the point of view of the national man-power problem, however, the arrangement would at best appear to result in a more than doubtful contribution to national labour needs at local expense.

Medical Memoranda

Benign Ulcers of the Greater Curvature

It is a general rule, subject to few exceptions, that the nearer to the pylorus, and especially to the greater curvature, the greater is the probability of malignancy in an ulcer. Thus the Mayo Clinic found malignancy in 10% of lesser-curvature ulcers, 65% of pre-pyloric ulcers, and 100% of greater-curvature ulcers.

There are many experienced surgeons and radiologists who have never seen a benign greater-curvature ulcer, whereas malignant ulcers involving the greater curvature are by no means a rarity. Up to the time of writing only 17 proved cases of benign greater-curvature ulcers had been recorded. The following is a report of the 18th case.

Case Report

The patient, a woman aged 66, gave a history of "bilious attacks" for five years, worse during the last six months, with increasing anorexia, attacks of vomiting, abdominal distension, and constipation. Abdominal pain was not an important symptom, nor was any mass felt on palpation. A blood count showed: red cells, 2,500,000; haemoglobin, 48%; colour index, 0.9.

At a barium-meal examination I found a large ulcer crater on the greater curvature, at the junction of its middle and lower thirds

(see Fig.). The mucosal pattern above and below the ulcer was normal, but at the base of the ulcer convergent widened rugae were present. Tenderness on pressure was localized to this area and also to the region of the duodenal cap, which showed constant deformity. The greater curvature for 2 in. (5 cm.) below the ulcer was crenated.

The radiographic mucosal appearance of the ulcer suggested innocence, but its position was strong evidence in favour of malignancy. It was decided to operate, and I am indebted to Mr. G. Bohn for the following extract from his operation findings. "There was a large apparently innocent ulcer on the greater curvature of the stomach, with much induration around it. There was also a

large duodenal ulcer which was attached to and penetrating into the pancreas. On opening the stomach before fixation I found two ulcers and the scar of a third ulcer all lying exactly on the greater curvature and joined together by thin white scar tissue. The biggest ulcer, which was the most proximal of the three, contained an artery in its base. I carried out an anterior Polya gastrectomy, the section through the duodenum being just proximal to the ulcer there." The patient made an uninterrupted recovery from this operation.

Histological examination by Dr. J. Mills of the large ulcer (1 in. (2.5 cm.) in diameter and situated 4 in. (10 cm.) from the pylorus) showed "a typical benign peptic ulcer, the floor of which is composed of fibrosed fat, lined on the gastric aspect with inflammatory exudate. Near the gastric surface is a large vessel, which no doubt opens on the surface at some plane other than that of the section."

COMMENT

The operative finding of multiple greater-curvature ulcers is unique. That only the largest crater was demonstrated radiographically is understandable in view of the marked crenation of the greater curvature.

Before 1914 no single proved case had been recorded. There are records of 36 cases without histological examination. Between 1914 and 1928 there were 10 proved cases, mostly recorded by Continental authors. A brief analysis of the last 9 cases has been tabulated with the object of disclosing any factors which they may have in common. The series is of course too short to have any statistical value, but the figures suggest that the condition usually occurs in the more advanced age groups. The average age is 52. The distance of the ulcer from the pylorus varies between 1 and 5 cm., with an average of 3 cm. There is no common factor in the symptomatology, and diagnosis must be based on the radiological and histological findings.

This appears to be the first record of multiple benign ulcers on the greater curvature.

Author	Patient		Symptoms	Ulcer		Remarks
	Sex	Age		Diam.	Distance from Pylorus	
Matthews (1935)	F	57	Epigastric pain 2½ hours p.c. Duration 35 years. Relieved by food. No vomiting or haematemesis	1 cm.	12 cm.	Subtotal gastrectomy; well after 5½ years
Matthews (1935)	M	57	Epigastric pain 2 hours a.c. Duration 1 year. No vomiting or haematemesis	1·5 cm.	14 cm.	Subtotal gastrectomy; well after 15 mths.
Van Buchem (1938)	M	24	Epigastric pain 2 hours p.c. Duration 6 months. Vomited once. No loss of weight	Large	Middle third gr. curv.	Subtotal gastrectomy; well after 3 years
Williams (1941)	F	74	Severe pain and haematemesis. No previous symptoms	1·5 cm.	5 cm.	No operation; death
Williams (1941)	M	58	Haematemesis. Semi-comatose	4 cm.	6 cm.	No operation; death
Preiss (1944)	M	34	Epigastric pain relieved by food. Duration 15 years. Severe last 4 years, with haematemesis 2 years previously	5 cm.	6 cm.	Local resection; no follow-up
Blum (1944)	M	49	Epigastric pain a.c. Duration 10 years. Occasional vomiting and haematemesis	5 cm.	6 cm.	Also duodenal ulcer. Subtotal gastrectomy; well after 6 months
Cave (1947)	F	66	Bilious attacks for 5 years. Anorexia, vomiting, abdominal distension, increasing during last six months	2·5 cm.	7 cm.	Multiple greater curvature ulcers, and duodenal ulcer; anterior Polya gastrectomy
Campbell (1948)	M	52	Pain left upper abdomen 1 hour p.c. relieved by vomiting. Duration several years. Recent anorexia and loss of weight		Middle third gr. curv.	Gastrectomy

(Since the above communication was submitted for publication another proved case has been published (Campbell, 1948); this has been included in the Table.)

PAUL CAVE, M.B., B.S., D.M.R.E.,
Honorary Radiologist, Royal Berkshire Hospital, Reading.

REFERENCES

Blum, S. D. (1944). *Amer. J. Roentgen.*, **52**, 291.
Campbell, R. J. C. (1948). *Brit. J. Radiol.*, **21**, 146.
Matthews, W. B. (1935). *Ann. Surg.*, **101**, 844.
Preiss, A. (1944). *Brit. J. Radiol.*, **17**, 182.
Sproull, J. (1931). *Amer. J. Roentgen.*, **25**, 464.
Van Buchem, F. S. P. (1938). *Brit. J. Radiol.*, **11**, 667.
Williams, A. J. (1941). *Radiology*, **37**, 746.

Dr. William P. Forrest addressed the International Conference of Social Work at Atlantic City recently on the World Health Organization and social medicine to-day. He said that, though one professor of social medicine had collected 100 different definitions of the term, he himself regarded social medicine as a philosophy rather than a subject. It was part of the belief that medicine should no longer be taught or practised from a negative outlook. He would like to see medical students prohibited from studying anything divorced from its context. Discussing the health visitor, he thought they should give her fewer families to look after and more duties to perform. They would thereby greatly decrease the number of official visitors to each household in favour of one welcome visitor. There might be families who enjoyed being visited by a stream of social officials, but he hoped they were in the minority. The health visitor could easily undertake the duties of the school nurse, the tuberculosis nurse, the venereal diseases nurse, the friend of unmarried mothers. She could become a most remarkable and essential agent of all or nearly all the departments concerned with social service.

Reviews

DERMADROMES

Skin Manifestations of Internal Disorders (Dermadromes). By Kurt Wiener, M.D. (Pp. 690; 386 text illustrations and six colour plates. 63s.) London: Henry Kimpton. 1947.

This book will be a useful work of reference to both general physicians and dermatologists. Many writers in the past have emphasized the close connexion between internal complaints and external manifestations on the skin, but we do not remember anyone's undertaking the formidable task of collecting and classifying them. The magnitude of the work may be gauged from the size of the volume and the number of references, which exceed 3,000. The author considers that the works and their authors referred to should not be hidden away but shown on that page where their work is mentioned, instead of being listed at the end of each chapter or relegated to the end of the book, and he has therefore adopted the system of consecutive numbering beneath the main text. He hopes that the reader may be encouraged to look up some of the original sources himself. He has also invented a new word—"dermadrome"—which denotes any phenomenon on the skin that accompanies an internal disorder. In fact it is an exact synonym for the title of the book. Etymologically it is a better word than many medical terms.

Although attempting to make his work as comprehensive as possible the author has wisely omitted to discuss subjects that constitute entire divisions of medicine such as syphilis or the skin manifestations of allergy or the nutritional disturbances of infancy. Many writers have exhaustively considered these matters, and although they are an important part of dermatology their inclusion would necessitate nearly doubling the size of the volume. The word syphilis is not even mentioned in the index. Among diseases in which the cutaneous features are important and often serious are diabetes and tuberculosis. The author discusses these and their treatment fully. On the other hand many of the manifestations chronicled are of great rarity and are seldom seen except at the meetings of clinical societies, where they effectively illustrate the thesis that dermatology is an enormous subject to know though a comparatively small one to practise, since the great majority of patients suffer from about a score of common diseases. However, this will not interfere with the interest the specialist will feel in the present volume, and we warmly recommend it to him. The illustrations are clear and well reproduced and are a great help to the text.

H. HALDIN-DAVIS.

PSYCHO-ANALYSIS IN BRIEF

Sigmund Freud. An Introduction. By Walter Hollitscher, D.Phil. The International Library of Sociology and Social Reconstruction. (Pp. 119. 8s. 6d.) London: Kegan Paul, Trench, Trubner and Co. 1947.

Dr. Hollitscher has provided an admirably short and lucid summary of the basic concepts and principal theories of Freudian psychology. It will prove useful not only to sociologists, for whom Dr. Hollitscher intends it, but also to medical men and others who wish at small labour to have some understanding of Freud. So far as the reviewer can judge, it is an account of Freudian doctrine free from modern accretions. It is remarkable how much better balanced Freud's own formulations are than those of most of his modern disciples and adherents. Freud himself was a pattern of open-mindedness, and again and again made reservations against the undue extension of his theories and left room for the operation of other factors, such as those of a hereditary and constitutional kind.

The charge can be laid against his spiritual descendants that they have neglected the exploration of these lacunae. Freud's theory of psychopathology is an aerial structure which has few points of contact with the solid basis of knowledge in physiological, neurological, and biological fields. His disciples have built up and up instead of downwards to the ground. Had they pursued the latter course we might have seen real advances, instead of increasing mysticism and dogmatism and a schism of the churches. To take but one example: Freud's theory of the unconscious was a notable advance for 50 years ago, but in its presentation of anthropomorphized antagonists, "ideas" and the "censor," as if they were things rather than processes it is out of touch with modern medicine. Nevertheless, Freud's "unconscious" is directly translatable into neurological terms. So much cannot be said of some less fundamental concepts to which a central position has been given, such as the castration complex. It is frankly incredible that all mothers threaten their sons with castration nowadays, that growing girls are kept in utter ignorance of their sexual functions, that the infant in the process of being born is "aware of some vast upheaval which disturbs the economy of its narcissitic libido," that all subsequent experience of anxiety is related to this birth trauma. However, not all psycho-analysts still embrace these views. Before Freudian psychology can take its place in the general structure of science it will have to subject its theories to the test of critical experiment, to which so far no Freudian has shown much inclination.

ELIOT SLATER.

CORRECT DIAGNOSIS

Methods of Diagnosis. By Logan Clendening, M.D., F.A.C.P., and Edward H. Hashinger, M.D., F.A.C.P. (Pp. 868; 143 illustrations. 63s.) London: Henry Kimpton. 1947.

The capacity for accurate diagnosis is perhaps the outstanding requisite for the successful practice of medicine. To a great extent it can be acquired only by apprenticeship to good clinicians followed by practical experience, but there is always a use for the attempt to summarize in books the process by which diagnoses are correctly made, if only because the written word does not share the ephemeral fate of the spoken. In Logan Clendening's own words: "The patient does not say to the physician, 'I have amyotrophic lateral sclerosis,' or 'I have typhus fever,' but 'I am dizzy,' or 'I have lost weight,' or 'I have a pain.' The average textbook in medicine takes up the description of diseases under their proper names, and is not therefore of help to the physician at the bedside of his patient until after he has determined what disease is present. This work therefore discusses the diagnostic possibilities of a given case, starting from the symptoms or from the signs, or from the laboratory data or *x*-ray picture, or the electrocardiographic record which the patient presents."

The book opens with a long chapter on the principles of logic and their application to the interpretation of clinical data. The reviewer found this an interesting and instructive approach. Thereafter the authors discuss the significance of various symptoms, signs, and special investigations in considerable detail. They reiterate the conviction that, although it is difficult to say precisely what makes outstanding diagnosticians, a characteristic of such clinicians is that they consider all possible causes of the various symptoms and signs, if only to dismiss them. The authors therefore include many lists of diseases which may present with given symptoms or signs. These lists gain in significance through being based on the practical experience of the authors or of other medical authorities. The style is refreshing, for the book is enriched with many classical descriptions of disease, enlivened by pointed and amusing anecdotes, and spiced with American colloquialisms. The reviewer believes that physicians will read this book with pleasure and profit.

SIDNEY TRUELOVE.

A CORNISH HOSPITAL

A History of the West Cornwall Hospital, Penzance. By Dr. E. C. Edwards. (Pp. 47. No price.) Truro: Oscar Blackford, Ltd.

Dr. Edwards is to be congratulated on having recorded the history of the West Cornwall Hospital, especially at this time when the fruits of public charity have been deemed ripe for plucking by the State. We may well be proud of our hospitals and of the men and women on whose enterprise and generosity

they depend. The wave of charity which began in London in the early eighteenth century rolled on in the course of time to the provincial cities and towns, so that before long there were few of any importance which did not boast of an infirmary or a dispensary.

Founded in the year 1809 as the Penzance Public Dispensary and Humane Society, it became sixty years later the West Cornwall Dispensary and Infirmary and later still (in 1929) the West Cornwall Hospital. Credit for the foundation of the hospital goes to Dr. J. B. Borlase and also to two early benefactors, W. H. Hoare, of London, and Sir Richard Acland. When Borlase, "our lamented friend and leader," died in 1813, his place was taken by the "excellent, talented, and zealous" Dr. James Montgomery, whose family service ceased only in 1908 on the death of his grandson, Dr. Hugh Montgomery. The first committee provided facilities for vaccination and also for the resuscitation of the apparently drowned. They equipped themselves with Dr. Fothergill's latest apparatus, to supplement if not to supplant the bleeding that was then the vogue, and went so far as to offer rewards to any who rendered service to shipwrecked mariners. The local tradition for their care has persisted to this day, and to the everlasting credit of this hospital stands their special record of service during the dark days of 1917–18, when the U-boat campaign nearly succeeded in bringing about our downfall.

The committees seem to have been fortunate in their choice of officers and servants, though it is disquieting to read that Jane Eva, who with her mother Anne acted as housekeeper for almost forty years on a modest wage scale of from 2s. to 2s. 6d. per week, was found guilty of "taking in lodgers" and of "allowing disorderly Females to congregate in the passage during the hours of Divine Service on Sunday Evening last." These misdemeanours, which were her undoing, seem to have resulted from her inordinate liking for the merry company at the Turks Head. There are the usual headaches for hospital committeemen, such as accounting for all the leeches purchased and finding sufficient money at the time it was wanted, but on the whole the people of Penzance seem to have given their institution the support it deserved. The committee, too, seem to have been intelligent and broadminded, for we read that in the year 1824 they sent their dispensing apothecary to London for the purpose of improving his professional abilities.

It is to be hoped that Dr. Edwards's apprehensions about the future of voluntary hospitals under State management will not be justified by the course of events. The voluntary hospital, so fundamentally Christian in its tradition, has a deservedly warm place in the hearts of our people, and any interference in its essential nature could not be tolerated.

W. H. MCMENEMEY.

CATALAN SURGERY

Diagnóstico y Terapéutica Quirúrgicos de Urgencia. By Dr. F. Domenech-Alsina. (Pp. 912; 330 figures. No price given). Barcelona-Buenos Aires: Salvat Editores, S.A. 1947.

In 1936 the author of this book published in collaboration with Manuel Corachán *Diagnóstico y Terapéutica Guirúrgicos de Urgencia*, a book that was an outstanding success, and despite its having been reprinted in Buenos Aires it has been long out of print. Following the unfortunate death of Prof. Corachan in 1942 the co-editor has published the book anew. He has changed the title and reviewed the text, so that it now incorporates all the lessons learned in recent years about emergency surgery.

In spite of its being a book mainly based on personal experience, the majority of the views set out in it may be considered to be those of the Catalan school of surgery, and the author expresses in the preface his gratitude to a number of prominent Barcelona surgeons who have contributed by their advice or with their material to the completeness of the work. The book is divided into two main parts: the first on general problems, shock, surgical infections, burns, etc., and the second on the diagnosis and treatment of the acute surgical emergencies. The presentation is excellent and the bibliography is fairly complete. It is a book which will be useful to students, undergraduates, and postgraduates alike.

J. TRUETA.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

The Problems of Family Life. By Agatha H. Bowley, Ph.D. 2nd ed. (Pp. 120. 6s.) Edinburgh: E. and S. Livingstone. 1948.

A study of the more difficult problems of bringing up a family.

Hygiene for Nurses. By John Guy, M.D., D.P.H., F.R.F.P.&S., F.R.C.P., and G. J. I. Linklater, O.B.E., O.St.J., T.D., M.D., D.P.H., D.T.M.&H., M.R.C.P. 7th ed. (Pp. 242. 6s.) Edinburgh: E. and S. Livingstone. 1948.

Intended for student nurses as well as the qualified

Handbook of Practical Bacteriology. By T. J. Mackie, C.B.E., M.D., D.P.H., and J. E. McCartney, M.D., D.Sc. 8th ed. (Pp. 642. 25s.) Edinburgh: E. and S. Livingstone. 1948.

The text has been completely revised to bring the book up to date.

Psychiatrie et Psychologie. By J. Saidman and others. (Pp 94. 145 francs.) Paris: Synthèse et Thérapeutique. 1948.

A collection of papers by various authors on psychiatry and psychology.

The Legacy of Swift. Edited by Maurice Craig. (Pp. 70. 5s.) Dublin: Colm O. Lochlainn. 1948.

Notes by various authors on the history of St. Patrick's Hospital, Dublin.

A Pocket Gynaecology. By S. G. Clayton, M.D., M.S., F.R.C.S., M.R.C.O.G. (Pp. 111. 7s. 6d.) London: Churchill. 1948.

A short factual summary.

Textbook for Midwives. By Wilfred Shaw, M.D., F.R.C.S., F.R.C.O.G. (Pp. 689. 12s. 6d.) London: Churchill. 1948.

A textbook for the serious student.

A Catalogue of Insecticides and Fungicides. By Donald E. H. Frear, Ph.D. (Pp. 203. $6.50.) London: Wm. Dawson and Sons. 1947.

Lists the results of testing about 10,000 substances.

The Organization and Management of Hospital Stores. By J. E. Stone, C.B.E., *M.C.* (Pp. 105. 15s.) London: Faber. 1948.

A factual account of stores organization, records, and accounts.

Le Traitement de la Syphilis en Clientèle. By H. and L. Gougerot. 5th ed. (Pp. 915. No price.) Paris: Librairie Maloine. 1947.

An illustrated manual for the practitioner.

Everyday Dietetics. By M. Martin-Leake. (Pp. 78. 6s.) London: Pitman. 1948.

A practical account for domestic science students and housewives.

Phtisiologie du Médecin Praticien. By M. Bariéty and G. Brouet. 2nd ed. (Pp. 400. 650 francs.) Paris: Masson. 1947.

A clinical account of pulmonary tuberculosis.

Anatomie Artistique. By Arnould Moreaux, M.S.A.F. (Pp. 366. 850 francs.) Paris: Librairie Maloine. 1948.

The anatomy of the skeleton and musculature for art students.

Transactions of the American Ophthalmological Society. Vol. XLV. (Pp. 683. No price.) Philadelphia: American Ophthalmological Society. 1947.

Papers on a wide variety of ocular conditions and their investigation and treatment.

Handbook of Venereal Infections. By R. Grenville-Mathers, M.A., M.D., Ph.D., F.R.F.P.S.G., A.R.I.C. (Pp. 116. 12s. 6d.) London: Sylviro Publications. 1948.

A summarized account of diagnosis and treatment.

Juvenile Delinquency in an English Middletown. By Hermann Mannheim. (Pp. 131 12s. 6d.) London: Kegan Paul, Trench, Trubner. 1948.

A study of juvenile delinquency at Cambridge.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JUNE 19 1948

AUTONOMY IN ORGANIZATION FOR SPECIALISTS

With the approach of the appointed day consultants and specialists are taking a lively interest in the organized representation of their interests in the National Health Service. The B.M.A.'s proposals for consultants and specialists organization were set out in the annual report of Council,[1] and the part of the report dealing with this was reprinted in the *Supplement* of May 22. The whole matter will be discussed at the Annual Representative Meeting in Cambridge, when there will be the opportunity to debate the method of election, the kind of representation, and the functions of the central and peripheral committees. There will, for example, be the motion by Bournemouth asking that the Central Consultants and Specialists Committee "shall be an autonomous body with full powers to determine policy on consulting and specialist and hospital matters and action through the administrative machinery of the Association." The motion goes on to suggest that decisions of the Committee should not be subject to the approval of Council or Representative Body "except in so far as they may affect other forms of practice or other aspects of the policy or activities of the Association."

There is clearly room for making adjustments to meet the wishes and needs of consultants and specialists. For the first time they are coming into an organized medical service, and new methods will be found to meet the new situation. The Association's constitution is sufficiently flexible to allow for this. It is probable that consultants and specialists will, as is suggested in the Bournemouth motion, wish to have autonomy within the framework of its terms of reference. It may well wish to follow the model of the Insurance Acts Committee, whose policy is controlled by its governing body—the Panel Conference. Consultants and specialists might wish to have a consultants conference as its governing body, and under the general policy laid down by this have executive power to act on its own resolutions without having these subject to the veto of the Council of the B.M.A. or the Representative Body. If this should be the wish of the consultants and specialists generally we believe that no obstacle would be put in their way. The B.M.A. is a voluntary organization, and if an important section of its members wish to order their affairs in a certain fashion the elasticity of the voluntary principle will make it possible for them to do so. At the same time the Consultants and Specialists Committee may find it useful in certain matters to secure the backing of the B.M.A. Council and would not, we believe, wish to exclude this possibility.

Criticism has been levelled at the method of representation in the regional consultants committees. It is claimed that the teaching hospitals should have a larger and even perhaps dominant voice in matters which concern the terms and conditions of consultants and specialists in the new service. No one is likely to underestimate the importance of the teaching hospitals, but their predominant influence, as is that of the Royal Colleges, is in the academic field. The Spens Report, it should be remembered, advocates equality of status among the hospitals in the National Health Service. Though this is an ideal to be aimed at, it is unlikely that the teaching hospitals will ever lose their supremacy. But the margin of difference between teaching hospitals and non-teaching hospitals will, it is hoped, progressively narrow. This being so, it may be questioned whether a minority of hospitals should have a disproportionate representation either in the peripheral or in the central committees. All of these matters are open to reasonable settlement in a way most acceptable to the majority of consultants and specialists.

It would be regrettable if personal antagonisms or institutional rivalries were allowed to fog a fairly simple issue. To divide and so weaken the profession by setting up a new organization with a new and inexperienced secretariat, as has been suggested, would be a step not likely, we believe, to commend itself to the whole body of consultants and specialists. The Royal Colleges have sometimes been criticized, and often unfairly, for autocratic action. Their historical development has certainly favoured autocracy, and, worthy of the highest admiration as they are, they are not instruments fitted for the medico-political work necessary for securing satisfactory terms and conditions of service for consultants and specialists after July 5.

[1] *British Medical Journal Supplement*, 1948, **1**, 77.

THE PROPHIT SURVEY

During the last hundred years the death rate from tuberculosis has been falling steadily, till now it is only about one-sixth of what it was in 1851. The greatest diminution has been in the early years of life. Up to the first decade of the present century the mean annual death rate was highest in infancy and early childhood, but since then a change has occurred. The infantile death rate has continued to fall, whereas that in young adults, especially young adult females, has remained more or less stationary, with the result that the highest death rate now is in females aged 20 to 25 years. What is the reason for this? Numerous explanations have been put forward, but none of them is supported by sufficient evidence to be convincing. The continued high death rate from pulmonary tuberculosis in young women is still an unsolved problem and presents a challenge to all those who are interested in overcoming what is the major infectious disease of Western civilization.

In an attempt to throw some light on this problem the Royal College of Physicians decided to conduct a survey of the incidence of tuberculosis in selected groups of young adults, with the special objects of following the natural history of the infection from its earliest stages and of determining which persons or groups of persons are most likely to develop clinical disease.[1] The project was made

[1] *Tuberculosis in Young Adults:* Report on the Prophit Tuberculosis Survey 1935–44. Royal College of Physicians. 1948. H. K. Lewis, London. 30s.

possible by a bequest of the late Mr. J. M. G. Prophit, and was guided by a widely representative committee under the chairmanship of the President. Observations were made over a ten-year period from 1935 to 1944. Ten thousand presumably healthy young adults came under observation; they belonged to five groups—contacts, nurses, medical students, naval entrants, and controls—and were examined at yearly or sometimes six-monthly intervals by chest radiography and by the graded Mantoux intradermal tuberculin test. The subjects were followed up for varying lengths of time to see what proportion developed tuberculosis. Owing to difficulties caused by the war observations on some of the groups had to be curtailed, and attention became focused mainly on nurses. The work was carried out by three Prophit scholars—Dr. Ridehalgh, Dr. Daniels, and Dr. Springett—to whose high purpose and unflagging zeal under most trying conditions the success of the investigation must be mainly attributed.

The high incidence of tuberculous infection was revealed by the initial tuberculin test; the proportion of subjects reacting to 1.0 mg. or less of old tuberculin ranged from 64% among the naval entrants to 93% among the contacts. Omitting the naval entrants, who were not followed long enough, the rate at which infection occurred was greatest in the nurses and least among the controls. Thus nearly all the nurses who were tuberculin-negative originally, three-quarters of the medical students, and rather over half of the controls become tuberculin-positive within three years of entering the survey. At the time of Mantoux-conversion about 30% of the subjects suffered from transient symptoms presumably related to their infection, and in 8% lesions of the lung were discovered soon afterwards on radiographical examination. Subsequent observation showed that just under half of those with radiographic changes soon after conversion developed tuberculous disease, as opposed to one-twentieth of those in whom no such lesions were detectable. This finding is of considerable importance, since it emphasizes the need for supervising young adults after Mantoux-conversion.

A further aid in estimating the risk of breaking down was provided by the degree of reaction to the tuberculin test; the higher this was shortly after Mantoux-conversion the more likely was tuberculous disease to develop. Moreover, in general terms, the greater the degree of exposure to infection, whether in initially tuberculin-positive or in initially tuberculin-negative subjects becoming positive, the higher was the tuberculosis morbidity rate. As other workers have found, the disease occurred more often in those who were tuberculin-negative originally and became positive while under observation than among those who reacted to tuberculin on entry. A further difference between these two groups was that when infection did progress in those who had recently become Mantoux-positive, clinical symptoms generally appeared within a year of conversion, whereas in the initially Mantoux-positive reactors the incidence of tuberculous disease was low in the first year, but tended to increase with each year of nursing experience. Among nurses genetic immunity clearly played a part; the disease was commoner in girls from Wales and Ireland than in English girls, though there was no evidence that it ran a more fatal course.

The report has something of value to say on the prognosis of the minimal lesion. Of 68 cases diagnosed on entry to the survey and followed up for the sake of interest, 51% proved to be progressive and 49% retrogressive or stationary. Of 97 cases arising after entry to the survey and observed for an average period of two and a half years, 45% became clinically active, 28% showed radiological evidence of local spread or of fresh foci elsewhere without developing symptoms, and 27% were non-progressive. On the whole, these observations confirm those of other workers and show, as pathologists know quite well, that a considerable proportion of pulmonary lesions large enough to be detectable by *x*-ray examination undergo natural healing without special treatment. What we want to be able to do now is to pick out from among the group of persons showing minimal lesions those that are most likely to prove progressive. It is encouraging to learn that this subject is under study in a fresh survey of the Prophit committee.

There is a mass of data in the report which will interest students of tuberculosis. We have, however, already mentioned sufficient of the main findings to indicate some of the lines of action that are called for. It is evident that, if tuberculosis in the young adult is to be diagnosed at an early stage when treatment is most effective, all persons of 18 years of age or over should not only be kept under general medical surveillance but should be tuberculin-tested periodically and, when necessary, *x*-rayed. Those reacting negatively to tuberculin are known to be free from infection and therefore need not be *x*-rayed but should be tuberculin-tested at intervals. Those reacting positively should be *x*-rayed, and all those with a pulmonary lesion should be kept under close supervision. The chances of their developing clinical tuberculosis are greater if they have a high degree of sensitivity to tuberculin than if they are only weakly sensitive, and more attention should therefore be paid to the strong reactors. Tuberculin-negative reactors who become positive should be *x*-rayed at once. Those with pulmonary lesions who have at the same time a high degree of tuberculin sensitivity should be taken off work completely or prescribed a light régime of duty. In the experience of the Prophit survey about half of the persons in this category developed tuberculosis; they deserve, therefore, special attention. Over 90%, however, of those undergoing Mantoux-conversion have no signs of pulmonary disease on *x*-ray examination, and their chances of developing tuberculosis are only one-twentieth of those with radiological lesions. If tuberculosis does develop in these persons it tends to develop soon, and probably all that is required is to keep them under general supervision, and repeat their *x*-ray examination every three to six months for a year or two. If these measures were taken and if at the same time attention was paid to improving the nutritional state and correcting faults in environment and mode of life it should be possible to effect a material reduction in the amount of tuberculous disease in the young adult population, and probably an even greater reduction in the number of fatal cases.

In the final passages of his introduction to the report the President wisely raises an issue of even greater importance than the problems investigated by the Prophit

scholars. It concerns the whole of our attitude towards tuberculosis. Are we to restrict ourselves, as we have in the past, to the treatment of the individual patient, or are we to direct our efforts against the prevention of the disease itself? There is good reason to believe that if tuberculosis could be regarded like other infectious diseases, and if measures could be taken to prevent infectious persons from transferring their tubercle bacilli to other members of the community, greater progress would be made in a few years towards control of the disease than is ever likely to be achieved by our present methods. The problem is an epidemiological and social one, and under the new National Health Service its solution might well form the main task of medical officers of health, who, freed from routine hospital duties, should be able to concentrate attention on their most important duty—the prevention of unnecessary disease.

MENTAL HEALTH ADMINISTRATION

The National Health Service brings changes in the field of mental health administration as in every other branch of medicine. The Board of Control, now re-established in London after seven years' exile at St. Anne's on Sea, welcomes the integration, central and local, of the mental health services with the National Health Service. The annual report[1] for 1946 describes how centrally the administrative functions of the Board will be transferred to the Minister of Health. Its members and officers will in future act as the Minister's officers, though the Board will retain its quasi-judicial functions in relation to the admission and detention of patients where questions of the liberty of the subject arise. As local health authorities the county councils and county borough councils will be responsible for the initial care of patients under the Lunacy and Mental Treatment Acts, and in certain circumstances for after-care. They will also be responsible for the ascertainment, supervision, guardianship, and community training of mental defectives. It is believed that in the integrated service there will be opportunities for expanding the scope and increasing the efficiency of mental health provision. A closer association between psychiatry and general medicine is expected and a further breaking down of that isolation by which in the past the treatment of mental illness has so often been handicapped.

More than half the admissions to mental hospitals in England and Wales in 1946 were voluntary. This is more than twice the number obtaining in 1938 and is an encouraging indication of a greater public awareness of the importance of early treatment. The 25,326 discharges during 1946 represented 71.2% of the direct admissions, compared with an average for the preceding five years of 67.1%. This discharge rate, the highest ever recorded, is again largely due to the number of voluntary patients who seek early treatment. Many of them are quickly restored to health and leave after a short time. The number of voluntary patients admitted during the year was 18,059, and of 16,183 discharged 6,154 were recovered, and 7,603 relieved, the remainder being put down as "not improved." Only 351 voluntary patients out of a total of 17,208 such patients in mental hospitals were transferred to certified status; on the other hand, 823 certified cases were regraded as voluntary patients.

Some form of physical treatment is now used in every mental hospital to supplement other methods of approach. The Board has watched the development of prefrontal leucotomy, and considers that for certain types of cases this operation offers "a probability of relief and the possibility of recovery." Occupational therapy for recent cases and for patients in the early stages of illness is now given an important place in most hospitals; the Board wishes that its use for chronic patients was more clearly recognized.

In recent years there has been a steady rise in the number of admissions to mental hospitals, and in spite of the present high discharge rate the mental hospital population of England and Wales is increasing. In 1946 there were 35,585 admissions, 6,009 more than in 1945 and 8,148 more than in 1938. The total mental hospital population at the end of 1946—namely, 134,920—was higher by 1,113 than at the beginning of that year. The proportion of women residents was 57.2% and of men 42.8%.

The death rate expressed as a percentage of the daily average number resident was 7.55, compared with 6.81% which was the average for the pre-war quinquennium 1934–8. Owing to the late receipt of the general mortality statistics, the causes of death cannot be given completely for 1946. In 1945 by far the most frequent cause was disease of the coronary arteries, with pneumonia next in order, followed at a great distance by senility, pulmonary tuberculosis, intracranial lesions of vascular origin, and cancer. The death rate from tuberculosis in 1946 was lower than in any year since 1939, and the number of fresh cases lower than in any year since 1940. Dysentery showed an incidence rate of 9.0 per 1,000, the lowest figure since 1940, and a death rate of 0.1 per 1,000, the lowest for the last decade.

The effect of the Education Act, 1944, is clearly seen in the increased number of children notified by local education authorities as mentally defective. The number of such children in 1946 was 4,209, or nearly 1,000 more than in 1945 or 1944. The number of mentally defective persons in institutions or under statutory care in the community is close on 102,000. In the institutions for mental defectives the proportion of deaths during the year to the average number resident was 13.4 per 1,000. The chief causes of mortality were pneumonia, heart disease, tuberculosis, and epilepsy, in that order.

Shortage of accommodation is still a serious problem. At the beginning of this year there was overcrowding in mental deficiency institutions to the extent of more than 4,000 beds, while nearly the same number of mental defectives were awaiting admission. Mental hospitals show an aggregate overcrowding of 13.1% on the basis of recognized bed-space, and it is provisionally estimated that during the next ten years an additional 1,500 beds a year may be required to meet the increased numbers for whom accommodation must be provided. The Board points out that shortage of labour and materials and the priority necessarily accorded to housing have prevented almost entirely the provision of new accommodation for mental

[1] *Thirty-third Annual Report of the Board of Control for the Year 1946.* Part I. London: H.M.S.O. 9d. net.

patients for several years past, and, with regard to mental defectives particularly, a partial breakdown in institutional provision is already causing difficulties. Equally serious is the shortage of nurses and particularly of female nurses, though in the view of the Board there has recently been some improvement in the general conditions of service in mental hospitals and in the accommodation provided for nurses.

MEDICAL BIRTHDAY HONOURS

The outstanding feature of the medical Birthday Honours, of which a full list appears in another column, is the barony conferred on Sir Alfred Webb-Johnson, Bt., surgeon to Queen Mary and President of the Royal College of Surgeons since 1941. Before his election as President of the College, Sir Alfred Webb-Johnson was known to combine the skill of a general surgeon with a remarkable capacity for administration. He was for some years the Dean of the Medical School of the Middlesex Hospital, and it was largely through his untiring efforts that funds were raised for the rebuilding of the hospital, which was opened in June, 1935, by the Duke of York. Although more than half the term of his presidency was during the dark days of war, Sir Alfred Webb-Johnson has probably done more for the Royal College of Surgeons than any of his predecessors. Under his guidance it has become a live and progressive institution for research and postgraduate teaching. Departments have been established and professorships endowed for anatomy and pathology; a research chair in ophthalmology has been instituted; practical teaching has been started in the College laboratories for postgraduate students seeking higher qualifications; under the new Charter, Faculties in dental surgery and anaesthetics have been established in the College; the R.C.S. now publishes its own *Annals*, the first birthday of which was celebrated last week. Sir Alfred's social gifts have found expression in the monthly dinners for Members and Fellows. Sir Alfred is the third practising surgeon to be elevated to the House of Lords, and future debates there should benefit much from his shrewd wisdom.

The youngest of the Royal Colleges is honoured in the knighthood conferred on Mr. William Gilliatt; and knighthoods are conferred on Mr. John Newman Morris, Chairman of the National Council of the Australian Red Cross, and on Dr. David T. Rocyn-Jones for public services in South Wales. Air Vice-Marshal A. F. Rook, recently Consultant in Medicine to the Royal Air Force and now Director of Student Health Services at Cambridge, receives the K.B.E. The C.B. has been conferred on Surgeon Rear-Admiral O. D. Brownfield, Major-General J. J. Magner, and Dr. C. E. Good, and the C.M.G. on Dr. J. C. R. Buchanan, Director of Medical Services, Fiji, and on Dr. Percy Stocks, Chief Medical Statistician of the General Register Office. In congratulating these medical men on the honours bestowed on them the medical profession will also note with satisfaction the conferment of knighthood on the distinguished scientist, Charles Robert Harington, who is director of the National Institute for Medical Research at Mount Vernon, Hampstead.

SURGERY OF CONGENITAL HEART DISEASE

The last decade has seen some noteworthy advances in the technique of thoracic surgery. Since the report of the Committee of which Christie[1] was the chairman showed that subacute bacterial endocarditis could be cured by penicillin, more and more attention has been paid to the surgery of the heart and in particular to congenital heart disease. While there are innumerable variants of this condition, those compatible with life fall into four groups: patent ductus arteriosus, coarctation of the aorta, pulmonary stenosis, and septal defects. It was the frequency of the association of subacute bacterial endocarditis which stimulated surgeons to tackle the first of these groups. The success achieved provided further stimulus and led them to attempt operations which would have been considered quite impossible even before the last war.

The first successful ligation of the patent ductus was described by Gross and Hubbard,[2] and the first accounts of the operation in England were by Tubbs,[3] who reported the recovery of 6 out of 9 cases of patients with subacute bacterial endocarditis. Tubbs told the International Conference of Physicians last year that he had operated on 33 cases and though some deaths had occurred they were mostly before penicillin was freely available. At the same meeting Crafoord stated that his mortality for the operation was 2%, and stressed that if recanalization was to be avoided it was necessary to discriminate carefully between those cases in which ligature would suffice and those in which division with its greater risks was necessary. Crafoord and Nylin[4] described in 1945 their operation for the resection of aortic coarctation. In the course of experimental work on patent ductus arteriosus in dogs Crafoord noted the circulatory conditions which resulted after clamping the aorta at different levels and came to the conclusion that the surgical risks would not be too great. On the strength of these observations he took the risk in certain patients with a patent ductus of placing a clamp on the aorta above and below the point of entry of the duct into the aorta; the clamps were kept in position while he divided the duct and sutured the aorta; and in one patient this took 27 minutes. No significant disturbances were subsequently observed in the patients' internal organs or lower limbs.

Crafoord then decided to operate on a patient with coarctation and resect the stenosis; he performed the first of these operations[5] on Oct. 19, 1944. Blalock[6] had been considering the problem at about the same time and had performed an anastomosing operation in animals to improve the circulation peripheral to the stricture. This line of thought was continued by Blalock and Taussig[7] in considering the third type of congenital heart disease—pulmonary stenosis. They thought that though the structure of the heart was grossly abnormal it might be possible in many instances to alter the course of the circulation in such a manner as to lessen the cyanosis and the resultant disability. To this end they tried several operations and eventually decided that the most satisfactory was that which effected an anastomosis between the subclavian branch of the innominate artery and the superior aspect of the pulmonary artery. The results of this operation have been dramatic, especially in children between the ages of 3 and

[1] *British Medical Journal*, 1945, **2**, 132.
[2] *J. Amer. med. Ass.*, 1939, **112**, 729.
[3] *Brit. J. Surg.*, 1944, **32**, 1.
[4] *J. thorac. Surg.*, 1945, **14**, 347.
[5] *Thorax*, 1947, **2**, 121.
[6] *Ann. Surg.*, 1944, **119**, 445.
[7] *J. Amer. med. Ass.*, 1945, **128**, 189.
[8] *British Medical Journal*, 1925, **2**, 603.

9. In a series of 474 operations excellent results have been claimed in three-quarters and the mortality has not been high.

These results stimulated Brock to consider the problem further, and we published in the opening pages of last week's *Journal* an account of his brilliant work. He argued that the correct way to solve the problem of relief of valvular stenosis was by a direct attack on the valves. He pointed out that while in many cases of Fallot's tetralogy it was true that the stenosis was subvalvular, it was equally true that in many the stenosis was valvular. When a valvular stenosis was present it was diaphragmatic in nature and the fused valves were forced by the blood stream into a nipple-like projection with a tiny hole in its summit; the force of the blood pushed through this jet also caused dilatation of the pulmonary artery. Brock thought that the formation and structure of this stenosis showed that the condition was eminently suitable for relief by division, and that a much larger opening could be made in a shorter time, in exactly the right place, than is possible with the Blalock operation, in which a long and tedious dissection is necessary to secure a systemic artery of adequate size. He therefore attempted the division of the valves, at first under direct vision through a cardioscope passed straight down the left pulmonary artery. This gave him a good view of the valves, but the pulmonary artery being narrow the procedure placed too great a strain on the circulation and had to be abandoned. The experience gained, however, proved that it was possible to diagnose the presence of a valvular stenosis with some certainty at operation. He then decided to attempt the division of the valve after making an incision through the wall of the ventricle. So far as the relief of the stenosis is concerned, his results in three cases are excellent and there is no doubt that the operation will be performed with increasing frequency. The post-operative course of two of his cases was unfortunately complicated by arterial embolism, but now that this danger is known it can be treated by early embolectomy or perhaps prevented by the administration of heparin or dicoumarol.

What will be the next step in the development of the surgery of the heart? It may, perhaps, extend to acquired heart disease, and it is worth recalling that Souttar,[1] as long ago as 1925, attempted direct digital dilatation of the mitral valve in a patient with mitral stenosis. While it is the disease of the heart muscle that causes cardiac failure and death in the patient with chronic rheumatic carditis, it is possible that if the strain of the stenosed valve were removed from that muscle it might function for many years longer.

MENINGITIS IN THE NEWBORN

On another page H. R. Duval and J. T. Burrowes describe a case of *Bact. coli* meningitis in an infant which is of particular interest because the mode of origin of the condition is unusually clear. Very prolonged labour after rupture of the membranes, the onset of maternal pyelitis shortly after labour, the immediate onset of meningitis in the infant, and the finding of bronchopneumonia post mortem all point to an intrauterine infection via the amniotic fluid, the portal of infection being the lungs. This is an obvious route in such circumstances, and the danger to the infant from this cause during prolonged labour must be borne in mind. As these authors suggest, it may be an indication for chemotherapy, though the concentration of penicillin attainable in the foetal circulation would be sufficient to restrain infection only by such organisms as staphylococci and not *Bact. coli*.

Serious infections may arise in various other possible ways when the infant has first to adapt itself to a world heavily populated with bacteria. It is uncertain which is the most probable when meningitis appears a week after birth with no obvious explanation such as meningocele *Bact. coli* is much the commonest cause of meningitis during the first few weeks of life; the onset is usually within the first week, and prematurity commonly predisposes to it. The literature of the subject has been reviewed by K. J. Randall,[1] who also describes six of his own cases, all fatal. In this series prematurity seems to have been a factor in two and prolonged labour in one; on the other hand, pneumonic changes in addition to meningitis were seen only in two infants, whose delivery was normal. The onset in one of these was immediate and in the other about the sixth day; in the remainder it was between the fourth and seventh day. In one of these infants septicaemia was first detected by observing a leucocyte packed with ingested bacteria during the performance of a differential blood count; the condition of this cell, which is illustrated, is quite unmistakable. In some of these infants the condition was apparently unrecognized during life, and its signs, which do not always include either fever or obvious bulging of the fontanelle, can evidently be misleading. Sulphathiazole was given without effect in one case. *Bact. coli* meningitis, like most other life-endangering infections by Gram-negative bacilli, is an absolute indication for treatment with streptomycin, and we may hope that the next published series will include observations on the results of this treatment.

THE SPREAD OF POLIOMYELITIS VIRUS

The mode of spread of an infectious disease is usually most readily revealed by investigation of cases during the early stages of an epidemic. This is particularly true of a disease such as poliomyelitis, many cases of which are symptomless. In times when the disease is endemic the sources of infection are often not discovered. When an epidemic is at its height the infective agent is widely distributed, and there are so many temporary carriers that the connexion between the cases may not be detected. In the early stages of an epidemic, when infection results in more overt cases than when the disease is endemic, and when the foci of infection are still localized, careful field work can sometimes reveal the lines of spread. An instance of this is afforded by Sweetnam's article on page 1172 of this issue. He describes the rather explosive epidemic of poliomyelitis in Eccles during the summer of 1947. Early in the outbreak it was possible to demonstrate direct or indirect contact between many of the cases. Later cases did not appear to be connected so directly. Infection spread across the town from west to east, a movement that corresponded with the west-to-east sequence of epidemic peaks of incidence in the contiguous urban areas of Irlam, Eccles, Salford, and Manchester. This type of spread has been noted in other epidemics where children with minor illnesses have been shown to play an important part in transmitting the disease. Sweetnam's investigations showed that about 20 such cases occurred for every case of paralysis and that they were more numerous in the neighbourhood of frank cases. These findings support his conception of a carrier epidemic preceding the appearance of paralytic cases.

[1] *J. clin. Path.*, 1948, **1**, 150.

[1] *Amer. J. Hyg.*, 1947, **46**, 248.
[2] *British Medical Journal*, 1947, **2**, 303.

A different pattern is seen in the epidemic among young soldiers in Catterick Camp studied by Dixon and reported in this issue at page 1175. There was no case-to-case contact and no two cases were in the same unit. Minor febrile illnesses in soldiers were not more numerous than during corresponding months in previous years and did not appear to be related to the spread of poliomyelitis. Dixon suggests that the infection may have been transmitted by soldiers with symptomless infections or whose illnesses were so mild that they did not seek medical advice. The healthy adult carrier has been thought able to spread infection from the time of Wickman's studies onwards, and such carriers may have maintained the virus in the camp or introduced it from outside on return from leave. The explanations suggested for the Eccles epidemic and the cases at Catterick Camp are in accord, as explanations of the spread of poliomyelitis must be, with numerous demonstrations that frequency of cases is proportional to closeness of contact with a frank case of the disease. The recognition that patients may be infectious during the incubation period makes it possible to envisage contact as the main means of transmission. Zintek[1] has suggested, however, that the cases with nearly simultaneous onset in families are more probably due to exposure to an extra-human source of infection. In groups of cases with simultaneous onset it is necessary to consider the possibility of infection from some aliment contaminated with virus by flies or human carriers, but such a mode of spread would appear to be usually incidental to contact spread, just as streptococcal infections are sometimes transmitted by milk, although case-to-case spread is far more common. Precautions against the possible spread of the disease are touched on in a film, "Polio—Diagnosis and Management," produced for the Ministry of Health by the Crown Film Unit. It is the successor to the short one made last year[2] and was shown to a small audience last week. The film, which without tedium goes on for one hour, combines a first-class clinical demonstration with useful instruction on after-care and occupational therapy, and should prove of great value to general practitioners.

In another article in this issue (p. 1167) Field and Brierley refer to the spread of poliomyelitis virus within the body. The generally accepted view is that the virus spreads along nerve axons, but they suggest that some features of the disease are more readily explained by assuming that it spreads in the cerebrospinal fluid and that it may reach the central nervous system by lymphatic channels which they have demonstrated in the rabbit. In the body as in the community there may be several routes by which the virus spreads.

ADVERTISING OF PROPRIETARY MEDICINES

Successive statutes have forbidden the publication of advertisements offering treatments for certain diseases. The earliest was the Venereal Diseases Act, 1917, which made it an offence to advertise any preparation as a medicine for the prevention or cure or relief of such diseases. The Cancer Act, 1939, made it an offence to advertise any offer to prescribe remedies for the treatment of cancer. The Pharmacy and Medicines Act, 1941, similarly banned advertisements which implied that certain preparations might be used for the treatment of a number of diseases, including Bright's disease, diabetes, epilepsy, locomotor ataxia, and certain eye conditions. The same Act forbade publication of advertisements suggesting that any article might be used in a way calculated to produce miscarriage. In addition to these statutory injunctions a "British Code of Standards" has now been prepared with the approval and support of the principal newspaper and advertising organizations, as well as of the Proprietary Association of Great Britain.

This code brings under a voluntary ban the advertising of remedies for a further fifty or so diseases. The diseases range from alopecia to varicose veins, from amenorrhoea to gastric or duodenal ulcer, from gallstones to obesity. They include structural or organic defects of eyes or ears and many skin diseases. Some of the categories are vague—"diseased ankles," "artery troubles," "cardiac symptoms"—but have been much used in lay press advertisements.

The movement towards a code of this kind first took shape twelve years ago when the Proprietary Association brought out, in agreement with the Newspaper Proprietors Association, a number of self-imposed restrictions, and a few years later, with the Newspaper Society joining in, further restrictions were added to the list in order to raise the general standard to the level of the highest adopted by any individual newspaper. The restrictions, of course, were obligatory only upon the members of the organization concerned.

In 1945 the Advertising Association took a hand; a committee was set up for the preparation of a common code, and the eventual result is the present document, which is supported by all the organizations above named, together with the Incorporated Society of British Advertisers, the Institute of Incorporated Practitioners in Advertising, and the Periodical Trade Press and Weekly Newspaper Proprietors Association. Thus the code has a triple backing—those owners of the proprietary preparations who belong to their trade association, the owners of newspapers, daily and weekly, and those who handle advertising matter. In addition to the ban on the offering of remedies for certain diseases guidance is given in other directions. Misleading and exaggerated claims must not be made. Appeals to fear are discountenanced. Such terms as "miraculous" or "magical" are out of court. Diagnosis or treatment by correspondence is banned. There must be no "money back" offers or prize competitions. Claims that a product will promote sexual virility are to be avoided. No reference must be made to a college, institute, clinic, or laboratory unless in fact such an establishment exists, and there must be no reference to doctors or hospitals unless such a reference can be substantiated by independent evidence and is properly used. The name "Dr." must not be attached to a product unless the product was so named before 1944.

Certainly the way of the patent medicine advertiser is made harder, for claims like those with which the British public has long been bemused will not appear in reputable newspapers or be handled by reputable advertising firms if the members of their respective associations follow the guidance given by this new code. Recognition should be made of the self-denial which these ordinances impose. It may be recalled that in 1912 a Select Committee was appointed to consider the question of the sale of patent and proprietary medicines, and that one of its recommendations was an amendment of the Indecent Advertisements Act, on lines suggested by the British Medical Association, to include the total prohibition of the advertisement and sale (except the sale by doctor's order) of medicines purporting to cure a number of diseases, some of which were listed in the Pharmacy and Medicines Act twenty-seven years later, while others appear in this new code. Nothing further happened at that time, but since then, largely as a result of the action of the advertising profession and the public-spirited policy of enlightened newspapers, there has been a great improvement, which the new code will help to establish and carry further.

WEIGHT AND BLOOD PRESSURE

BY

R. A. MURRAY SCOTT, M.B.

Though information about the state of health of any section of the community is of particular value at the moment, few surveys of the nutrition of adults have been recorded. Some statistical records of haemoglobin levels are available, but little is known of the comparison, both in weight and in blood pressure, between age groups of people before the war and to-day.

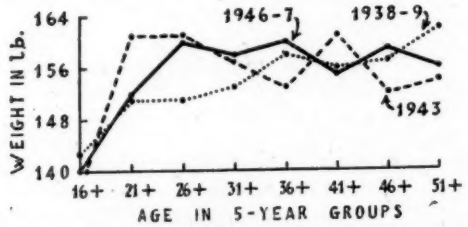
A review has been made of the weights and blood pressures of the male members of an office staff spread over the North of England. The table shows the age distribution of the men examined in 1938–9, 1943, and 1946–7.

Age Distribution

Age Group	1938-9	1943	1946-7	
			Ex-Service	Non-Service
16–20	38	29		104
21–25	152	8	35	24
26–30	302	11	32	28
31–35	291	72	70	7
36–40	192	128	38	55
41–45	139	60	10	81
46–50	76	69		52
51–55	46	28		42
Totals ..	1,236	405	185	393

The weights were taken fully clothed, but as the examinations were evenly distributed through the years seasonal variation in the weight of clothes has been ignored. The measurements of blood pressure before the war were taken by one doctor, while those taken in 1943 and 1947 were measured on the same instrument by two doctors, one of whom examined over three-quarters of the men. The measurements made by these two doctors have been several times compared and found to be similar. In the 1938–9 group the average weight was 155 lb. (70.3 kg.). The average weight in 1943 fell to 151 lb. (68.5 kg.), and in 1946–7 it rose to 156 lb. (70.8 kg.). These averages do not in themselves give a true picture of what took place, as the proportion of men in the several age groups varied in each period—e.g., the largest number of examinations in 1938–9 were in the 26–40-year groups, while in 1946–7 the largest group is 16–20 years.

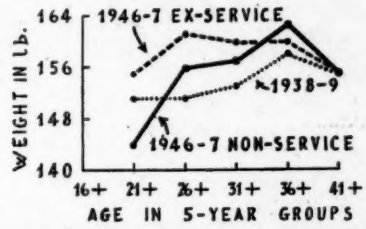
A more detailed exposition of weights by age groups is shown in Graph 1. The average weight in pounds is plotted against



GRAPH 1.—Average weight according to age groups.

five-year age groups. The number of men in each group can be seen from the above table. From the age of 21 to 40 the average weight in each 1946–7 group exceeds that in each comparable 1938–9 group, showing a most marked divergence of about 8½ lb. (3.8 kg.) at 26–30 years. The 16–20 age group is static in each period; so is the 41–50 group. In 1946–7, the 51–55 group is 5½ lb. (2.5 kg.) less than the 1938–9 counterpart.

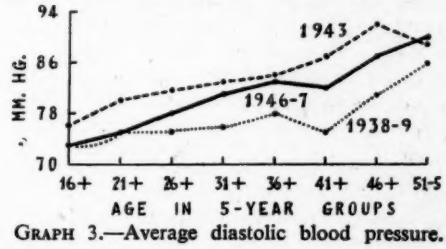
Graph 2 shows the effect of splitting the 1946–7 series into ex-Service and non-Service components and leaving the 1938–9 series for comparison. This shows that from 21–35 years the ex-Service men give a higher average weight than the non-Service men, while the 36–40 group of non-Service men is higher than the ex-Service group. The number of men in each group is now too small to be completely significant, but the steady trend of ex-Service men in three consecutive age groups to be heavier than the non-Service men is suggestive. It is interesting to note that of 52 men aged 46–50 years examined in 1943, the average chest measurement was 37 in. (92.5 cm.) and the waist 32½ in. (81.25 cm.), while of 52 men of this age group examined in 1947 the average chest measurement was the



GRAPH 2.—Average weight of ex-Service and non-Service men of the 1946–7 group compared with that of the 1938–9 group.

same, but the waist measurement was 1½ in. (3.75 cm.) greater. This can be compared with an increase in average weight of 7 lb. (3.2 kg.) of the 1947 group over that of 1943.

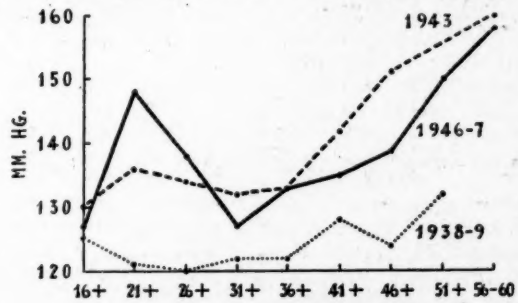
Graph 3 shows the rising lines of diastolic pressure of the increasing age groups of the three series of examinations. Through the whole of its length the 1938–9 line lies below those of 1943 and 1946–7. The 1943 line similarly lies above the other two. This grouping at once suggests that the war



GRAPH 3.—Average diastolic blood pressure.

strain of 1943, due to extra work and additional employment in A.R.P., fire-watching, and so on, coupled with the worries of bombing and the fear for relatives in the fighting line, caused a comparative rise of diastolic blood pressure at all ages. This increase has now fallen to a level roughly half-way between the wartime and pre-war levels. There is an interesting but unexplained dip in the 1938–9 and the 1946–7 lines at the 41–45-year group. Of more practical importance is the fact that the 46–55 groups of 1946–7 have a diastolic pressure averaging about 88 mm. Hg, which is some 5 mm. higher than that of the 1938–9 group.

Graph 4 records, the average systolic pressures of the age groups. It shows positively the great average increase in pressure in those over 40 years in the wartime and post-war groups compared with pre-war. The post-war heights show



GRAPH 4.—Average systolic blood pressure.

little decrease on the 1943 range. The rise of average systolic pressure in the 21–25 group in 1946–7 compared with the 1938–9 group is thought to illustrate the nervousness of men at their first examination, as no rise occurs in the diastolic pressure.

Conclusions

Up to the age of 40 years the men examined in 1946–7 are on the average heavier than men of the same age in 1938–9. From 41 to 55 years there is little difference between the two periods.

The men between 21 and 35 years who have been in the Forces are on the average heavier than those who have not.

The average diastolic pressures of all 1946–7 age groups are above those of 1938–9, the maximum difference being 12 mm. Hg at 41–45 years.

The average systolic pressures of all 1946–7 age groups are above those of 1938–9, the maximum difference being 27 mm. Hg at 46–50 years.

The rise in blood pressure can be correlated with a recent increase in neurocirculatory disorders in the male staff over 50 years of age.

This sample survey of a section of the community is interesting and provides nutritional implications. Additional information of this type from other sections of the community would help to paint more clearly the picture of the health of the people of this country to-day. Perhaps it is available, but not published.

ROYAL SANITARY INSTITUTE CONGRESS

INDUSTRIAL HEALTH DISCUSSIONS

A Health Congress was organized by the Royal Sanitary Institute at Harrogate from May 24 to 28. Delegates were present from several hundred municipal authorities and voluntary bodies, as well as from Government Departments, home and overseas. Dr. James Fenton and Dr. J. A. Ireland represented the British Medical Association. The Congress, over which Lord Inman presided, met in eight sections and at four special conferences. The president of the Conference of Medical Officers of Health was Dr. F. Hall, County Medical Officer, Lancashire. Dr. G. S. Wilson presided over the Section of Preventive Medicine and devoted his address to a description of the Public Health Laboratory Service, now established on a permanent footing under the National Health Service Act; on this subject he was followed by Dr. J. Greenwood Wilson and Dr. A. Leslie Banks. Dr. Andrew Topping presided over the Conference of Health Visitors, and urged, though with an awareness of the nursing shortage, that the health visitor should be a State-registered nurse.

Pneumoconiosis among Miners

One of the best sustained discussions in the Section of Hygiene in Industry, presided over by Prof. R. E. Lane, of the University of Manchester, was on the health of the coal-miner. Dr. J. B. Atkins, regional mines medical officer, Ministry of Fuel and Power, dealt with the problem of pneumoconiosis. In South Wales during the last two years there had been a steady improvement in incidence. In that area the problem had been so great as to strip the industry within three or four years of the best of its young man-power. By the end of 1945, 12,000 men, mainly skilled coal-face workers, out of a labour force of some 120,000, had been forced to leave the mines on account of this disease, thereby not only depleting the industry but seriously handicapping recruitment.

The general view was that the exceptionally high dust concentrations met with in South Wales, particularly in the mechanized mines before dust-suppression measures were taken, accounted for the wave of cases during recent years. Some concentrations were described by those who worked in them as being so thick that a man's lamp could not be seen at a distance of a few feet, and the choking effect was such that men frequently vomited their breakfast on starting work. The most effective attack on the problem had been made by ventilation, water infusion of the seam before mining, and the modification of mechanical mining to reduce the dust carried, for example, by wet boring and cutting and the incorporation of water sprays with pneumatic picks. Another line of investigation was by the finer analysis of jobs from the point of view of dust hazard. Regular *x*-ray examination of all men exposed would enable precautions to be taken when radiological signs of nodulation had developed, though Dr. Atkins pointed out that a single *x*-ray examination might be misleading if other clinical findings were not considered, because the appearance of *x*-ray changes due to dust might be masked by the development of focal emphysema. The first of a number of special light industry factories for the employment of men suffering from pneumoconiosis had recently been opened.

National Coal Board Medical Service

Dr. C. L. Cope, of the Scientific Department of the National Coal Board, described how research on pneumoconiosis was being actively pursued by the Medical Research Council unit at Cardiff, the team numbering nearly sixty. In this connexion reference should be made to the Goulstonian Lectures published in our last two issues by Dr. C. M. Fletcher, Director of the Pneumoconiosis Research Unit of the M.R.C.

Until the National Coal Board established an *x*-ray plant of its own, Dr. Cope continued, the contribution of the Scientific Department could only be the collection and co-ordination of information obtained from surveys and from records of dust concentrations. An advisory committee on nystagmus among miners which was formed originally by the British Colliery Owners Research Association was being actively maintained. Negotiations were proceeding for the appointment of a medical officer in the area of the small Kent coal-field to investigate miners' dermatitis. For some reason the incidence of dermatitis among miners in Kent was much higher than in any other part of the country.

A more difficult problem to tackle was the group of diseases not peculiar to miners. It was uncertain how miners' morbidity compared with that of the rest of the community. Chronic rheumatism was a good example of the type of condition on which more morbidity statistics were needed. It was held by some to be more common among miners.

Finally Dr. E. H. Capel, principal medical officer of the Board, discussed present and future arrangements. Under private ownership a few mines provided good medical services, but in general the industry lagged behind modern industries in this respect. Coal-mining was well known to be a dangerous occupation. During 1945 more than one miner out of every four sustained an accident or contracted an occupational disease necessitating more than three days' loss of work, a rate about seven times higher than that for industrial workers generally. During the past ten years the incidence of fatal accidents had fallen by about 30%, serious accidents had fallen slightly, but less serious accidents had risen by nearly 40%. Although the incidence of pneumoconiosis had fallen in South Wales since 1945, it had risen in other areas. Of other diseases, between 1,000 and 2,000 cases of nystagmus were certified annually; the incidence of occupational dermatitis was rising steadily, and chronic infections of the knee and elbow—the so-called "beat" diseases—remained at a high figure.

The medical service of the mines, as Dr. Capel saw it, would devote itself to selecting workers and assisting in their placement, controlling environmental conditions from the health point of view, and providing first treatment in accident and illness arising at work. One difficulty in organizing a medical service was that mines were small units. Of 956 mines, only 532 employed more than 500 men; 80 employed fewer than 100. If as a result of health measures absenteeism could be reduced from its figure of 12.5% last year to 11.5% it would mean an annual increase of about two million tons of coal.

Purity of Food

Several papers bearing on food inspection were read to the Congress. Mr. E. Dodsworth, chief sanitary inspector, Harrogate, discussed the adulteration of milk. He said that the Ministry of Health had suggested that out of every three samples of food and drink tested one should be of milk, milk being the ideal substance for the practice of adulteration. The familiar plea of defendants in milk cases that the appearance of the milk was due to the insufficient quantity and quality of the food given to the cows was contrary to the opinion of research workers hitherto, though worth re-examining. Mr. Dodsworth urged sharper penalties for offenders. The figures for adulteration remain obstinately high.

Ice-cream was also debated, and Mr. Morley Parry, chief sanitary inspector for Northampton, declared that owing mainly to the 1947 regulation which stated that all apparatus for the manufacture of ice-cream should be installed, maintained, and operated to the satisfaction of the local authority, the days of back-scullery manufacture of ice-cream were over. Mr. Parry was of opinion that there was no satisfactory equipment capable of complying with the regulations for heat treatment in their full form for those who manufactured less than

four gallons a day. Really adequate plant would raise the cost of ice-cream produced on such a small scale by 100 or 150%.

Epidemiology of Yellow Fever

In the Section of Tropical Hygiene, presided over by Dr. C. J. Hackett, director of the Wellcome Museum of Medical Science, the epidemiology of yellow fever was the main subject for discussion. Dr. A. F. Mahaffy, director of medical research at the Colonial Office, said that such a study fell into two epochs, each of them initiated and made possible by an important discovery. The first was the demonstration that yellow fever was an insect-borne disease, transmitted by the mosquito *A. aegypti*, and the second the transmission of the disease to rhesus monkeys.

In Africa, Dr. Mahaffy said, there was a wide field of immunity to yellow fever, extending from the west coast through Central Africa into Uganda and the Anglo-Egyptian Sudan—a much wider distribution of immunity than could have been predicted from the history of the disease. He mentioned in particular the work done in Bwamba, in the extreme west of Uganda. Here evidence had been found of a man-to-man yellow fever cycle with *A. simpsoni* as the vector and a monkey-to-monkey cycle transmitted by various forest-dwelling mosquitoes, of which *A. africanus* was the most important. The evidence indicated that the disease was endemic in the monkeys of the forest and that it was able to maintain itself indefinitely in these animals. There was every reason to believe that in Bwamba yellow fever was essentially a disease of monkeys in no way dependent on the presence of human infection but introduced from time to time into the areas inhabited by man.

Thus, Dr. Mahaffy pointed out, it seemed that there were two distinct kinds of yellow fever epidemiology occurring in two entirely different types of environment—one in urban centres, a disease of man, transmitted by the domestic mosquito *A. aegypti*, the other associated with jungle or forest, a disease of the lower animals, transmitted by forest-dwelling mosquitoes. He emphasized that the difference between these types was wholly epidemiological; in every other respect the urban disease was identical with that which originated in the forest. It was now believed that the forest disease was the original epidemiological type, and that it was from this source that urban centres were invaded from time to time.

So far as the control of the urban disease was concerned, the method of choice was the elimination of the vector, *A. aegypti*. The control of forest vectors was a much more difficult, perhaps an impossible, matter. The elimination of the reservoir of virus in the animals of the forest was impracticable, and this source of infection remained a constant threat to any urban centre with which it was in communication and in which the urban vector had not been eradicated, or at least brought under effective control. Vaccination against forest infection, however, was available, and was specially indicated in the case of crews and passengers of air and steamship traffic operating between endemic and non-endemic regions.

Air-route Sanitation

Mr. C. B. Symes, entomologist to the Colonial Insecticides Committee, brought forward in the same Section a suggestion for Commonwealth air-route sanitation, namely, the creation of a high-level air-sanitation authority, a committee and executive with wide experience of health problems in the Tropics and elsewhere, whose duty it would be to inspect important airports and advise the local authority on the application of sanitary measures. It would concern itself also with the siting of new airports, the planning of medical-inspection rooms and quarantine buildings, and the sources and supplies of food for passengers and crews. Sanitary zones would be demarcated, based not on territorial boundaries but on the distribution of the main infections, and an adequate standard of sanitation for all main route airports would be established.

Investigations had shown that large numbers of insects of many groups, including those incriminated in spreading malaria, yellow fever, plague, and trypanosomiasis, were conveyed for long distances by aircraft and apparently suffered no ill-effects from changes of altitude and temperature. Of 200 species of insects found in aircraft in Africa, the commonest were mosquitoes, including the vectors of malaria, and the two vectors and seven possible vectors of yellow fever. If insects could be adequately dealt with on and around airports and in aircraft the problem of insect-borne infections in relation to air travel would be reduced enormously.

Airport health control was also discussed by Dr. W. P. Cargill, deputy M.O.H., Southampton. His general conclusion was that the present quarantine procedure applied to aircraft coming to this country was a compromise between maximum protection for our own people and minimum interference with travel, and seemed to be satisfactory, provided full use was made of the protection afforded to travellers by artificial inoculation. Experience had shown that although the danger to this country from the introduction of exotic infectious disease by air travel was perhaps less than had been expected, the introduction of smallpox from the East was always possible. The other "convention" diseases were less to be feared as regards introduction, but passengers incubating smallpox had arrived in this country by air during each of the last three years. True, they were Service men, but as civilian air traffic expanded so would the risk increase.

HOSPITAL PLANNING AND METHOD

ROYAL COLLEGE OF NURSING CONFERENCE

A conference largely attended by matrons and nurse-administrators was held at the Royal College of Nursing on May 31 and June 1 and 2. The plan was followed of having a number of opening addresses and then dividing into discussion groups. The main theme was modern planning, equipment, and method designed to improve the service to the patients.

Modern American Hospitals

Capt. J. E. Stone, consultant to King Edward's Hospital Fund, who has lately returned from a visit to American hospitals, gave some impressions he had gathered. One thing which struck him in the modern American hospital was the reception department—a large and pleasing entrance hall, a desk labelled "Information," a courteous white-gowned hostess who knew everything about the hospital, a lounge in which visitors could wait, and a gift or hospitality shop. Another feature was a beauty parlour for the nurses; in America a well-turned-out nurse is considered to have a therapeutic value for the patient. In general discussion the lack of a proper reception department in British hospitals was deplored. One suggestion was that every patient and visitor should receive a leaflet about the hospital, written in an intimate way—not a series of "do" and "don't."

A point of controversy is whether nurses should serve meals. In American hospitals the dietitian is in charge of meals until they actually reach the bedside. An electrically heated trolley comes to the bed and also offers the patient some choice of dishes. The over-bed table is largely done away with, and a locker is provided which on pressing a button extends a table, and on pressing another button furnishes the patient with a reading-desk. Bedsteads are largely made of aluminium. The old institutional mattress is giving place to an interior spring or rubber mattress. Some discussion took place on the best distribution of beds in the ward. The parallel-to-the-wall system, largely adopted on the Continent, found a good deal of favour in the conference, as opposed to the usual system of alignment of beds with their heads to the wall.

Noise in Hospitals

Capt. Stone said that in large American hospitals the visual system for calls is being used in preference to the auditory system; in this country the visual system has been installed in the new Charing Cross Hospital. In one hospital of 800 beds with the auditory call system it was estimated that 47 calls through the loud speaker in every ward and corridor were made during an average day. In some hospitals in America and in at least two in this country a microphone system has been put in whereby the patient who wants the nurse can speak to her at a distance, and a promised development of this system is an intercommunicating telephone whereby the nurse can also

answer at a distance. Headphones for wireless are being discarded in American hospitals in favour of a "husher-phone"—a disk about 10 cm. in diameter—which is placed under the pillow so that the patient can lie and hear the programme and even the occupant of the next bed cannot hear a sound. Hospital doors can be a great source of noise; this can be abated by a wide single door, with a good check return and without a catch—a plan followed in Westminster Hospital. The elimination of metal gates for lifts in favour of automatic doors would do away with another source of noise; and a noise which can be very irritating to patients, the hanging of cups on metal hooks in the ward kitchen, can be overcome by the use of leather-covered or plastic hooks.

The lighting of wards was also discussed, and what was called strip lighting—apparently fluorescent lighting—found some favour, though it had some critics, one nursing sister remarking that with this lighting "you cannot make up your mind what colour the patient is." Fluorescent lighting was stated by Capt. Stone to be very popular in American hospitals, but some device for toning it down is used in the wards. In the discussion speakers preferred for lighting at night a low-level light which can be switched on by the bed, also an independent light on the locker or near by which can be used for clinical purposes as well.

Mr. Bevan on Postponement

The final session of the conference was addressed by the Minister of Health. Mr. Aneurin Bevan said that there had been suggestions that the new Health Service ought not to start on July 5 because of shortage of beds, of equipment, of health centres, of doctors, and of nurses. But it was "stupid nonsense" to talk of postponing the Act until they had got all they needed. Expectation would always exceed capacity. In any case if there was a shortage it was all the more reason for making a well-balanced use of the resources available. "If there is a shortage of doctors on July 5, when the cash relationship between doctor and patient will disappear, it is very much more important that the doctors who are in short supply should spend their time looking after patients who really need to be looked after than that they should be looking after a lot of hypochondriacs who can afford to pay."

So far as nurses were concerned Mr. Bevan considered that the National Health Service itself ought to be the best recruiting agency. The conditions of nurses had been improved during the last year or so, and they would be improved even more. For example, the superannuation scheme would follow them wherever they went, from hospital to hospital, a thing which did not obtain at present. As for health centres, of course we were going to have health centres, but not all at once. Housing was the most important of all health services; if he had to choose between building houses and building health centres his choice was for houses. If a mother could have her baby in a good modern house it was better for her than to be in a maternity home.

From the beginning he had been most anxious that the people who actually ran the Service should have a bigger and bigger share in the policies which governed it. Democracy was not in the putting of a cross opposite somebody's name once in five years, but in the dynamic participation of the citizen in the affairs of his own profession or service. With this in mind it had been arranged to put a nurse on each Regional Board, but the Regional Board was not the main administrative hospital unit; this was the Management Committee, and it was desired that the staff groups in every hospital should be so organized as to have direct access to that committee. Participation of the nurse at hospital, regional, and national level was provided for in this scheme. There would be a Nurses' Advisory Committee at the top under the Central Health Services Council which advised the Minister. These advisory councils were very important bodies with power to make recommendations. Mr. Bevan stressed the freedom of the nurse in the Service to work where she wished; there was no power of direction, though there might be a request to a nurse to go to a hospital where there was shortage of staff. The Regional Board could not dismiss a nurse over the Management Committee's head because she was unwilling to go to another hospital.

In conclusion Mr. Bevan said that much attention had been drawn to what we had not got, but sometimes it was a good thing to call attention to what we had got, and we had something in this country which was of priceless value—namely, the genius for combining State and voluntary activity. Here we had a great centralized health scheme organized by the Government and paid for by the State—it was extraordinarily difficult to convince people that there was no contributory basis, but that the Service was provided for everybody from the national exchequer—but the voluntary system would be still at work. The voluntary system would be found on the Regional Boards and the Management and House Committees. It was this compromise between State and voluntary activity which showed the peculiar genius of the British people, and thanks largely to this he predicted that in some years' time—not too far ahead—people would be coming from all parts of the world to this country to study a magnificent health system.

SCOTTISH HEALTH SERVICES COUNCIL

The Scottish Health Services Council has been set up under the National Health Service (Scotland) Act to advise the Secretary of State for Scotland on the Service. It has elected Sir Humphrey Broun Lindsay chairman and Prof. Sydney Smith vice-chairman. Dr. E. R. C. Walker, Scottish Secretary of the B.M.A., has been appointed joint secretary with Mr. T. D. Haddow, of the Department of Health for Scotland. The first meeting, which Mr. Woodburn attended, was held in Edinburgh on June 11. The following are the members of the Council:

Appointed until Dec. 31, 1949.—Lieut.-Col. J. C. Dundas, chairman, British Hospitals Association (Scottish branch); Prof. G. B. Fleming, visiting physician, Glasgow Sick Children's Hospital; Mr. J. M. Graham, consulting surgeon, Royal Infirmary, Edinburgh; Prof. Sir David Henderson, Professor of Psychiatry, Edinburgh University; Mr. James F. Henderson, dental practitioner; Miss C. M'N. Keachie; Dr. David M'Call, assistant resident secretary of the Pharmaceutical Society in Scotland; Dr. George MacFeat, chairman of Scottish Committee of B.M.A.; Prof. J. W. M'Nee, Regius Professor of Practice of Medicine, Glasgow; Mr. John Mann, Convener of Lanarkshire; Dr. W. D. D. Small, President of the Royal College of Physicians, Edinburgh.

Appointed until Dec. 31, 1950.—Dr. A. D. Briggs, medical superintendent, Stobhill Hospital, Glasgow; Sir Humphrey Broun Lindsay, Convener of East Lothian; Prof. D. F. Cappell, Professor of Pathology, Glasgow University; Dr. R. C. Scott Dow, examiner in dental surgery for Royal College of Surgeons, Edinburgh; Miss J. P. Ferlie, matron, Simpson Memorial Maternity Pavilion, Royal Infirmary, Edinburgh; Dr. G. Matthew Fyfe, Medical Officer of Health, Fife; Dr. J. R. Langmuir, chairman of Glasgow Local Medical Committee; Prof. J. R. Learmonth, Regius Professor of Surgery, Edinburgh University; Dr. I. H. Maciver, member of Northern Regional Hospital Board; Mr. William O'Neill; Capt. Joseph Steel, director of Crichton Royal Institution, Dumfries; Capt. J. P. Younger, Director of Stirling Royal Infirmary.

Appointed until Dec. 31, 1951.—Prof. Dugald Baird, Regius Professor of Midwifery, Aberdeen; Dr. W. G. Clark, Medical Officer of Health, Edinburgh; Mr. Alexander Cunningham, member of Stirling County Council; Mr. C. G. Drummond, pharmacist; Dr. Mary Esslemont, general practitioner in Aberdeen; Mr. W. F. Ferguson, secretary and treasurer of Royal Infirmary, Edinburgh; Miss E. G. Manners, matron, Glasgow Royal Infirmary; Dr. A. F. Wilkie Millar, general practitioner in Edinburgh; Mr. Thomas Rankin, consulting dental specialist to plastic and jaw injury units at Bangour and Ballochmyle; Dr. Ferguson Rodger, Medical Commissioner, General Board of Control for Scotland; Prof. Sydney Smith, Regius Professor of Forensic Medicine and Dean of Faculty of Medicine, Edinburgh University; Mr. James Young, Provost of Kirkcaldy.

BOARDS OF GOVERNORS OF TEACHING HOSPITALS

The Minister of Health has appointed the following chairmen and members of Boards of Governors of Teaching Hospitals:

United Newcastle-upon-Tyne Hospitals.—Mr. Norman Dakeyne Newall, O.B.E., J.P. (chairman), who is appointed for the period ending March 31, 1951.

Appointed for the period ending March 31, 1950: Dr. Robert Vivian Bradlaw; Alderman John Chapman; Mr. Edward Colgan; Mr. Edward Foyle Collingwood; Mr. Henry Harvey Evers, F.R.C.S.; Mr. Fred Burnand Fenwick; Prof. Ronald Bramble Green; Prof. Frederick John Nattrass; Mr. John Walmsley; Mr. Thomas Alexander Wright.

Appointed for the period ending March 31, 1951: Mr. William Allan; Viscount Allendale, C.B.E., *M.C.*; Alderman Peter Strong

Hancock, O.B.E.; Mr. W. Stanley Mitcalfe, *M.C.*; Mr. Robert Muckle; Rt. Hon. Lord Eustace Percy; Viscountess Ridley, J.P.; Sir Walter Thompson, J.P.

Appointed for the period ending March 31, 1952: Dr. Thomas Henry Bates, J.P.; Mr. Norleigh Booth; Dr. Samuel Whately Davidson; Alderman N. Garrow, J.P.; Mr. John Gilmour, F.R.C.S.; Sir Mark Hodgson, O.B.E., J.P.; Mr. Walter Daglish Lockey, J.P.; Prof. James Calvert Spence, *M.C.*; Alderman Miss Margery Taylor, O.B.E., J.P.; Mr. Sam Usher.

United Leeds Hospitals.—Sir George W. Martin, K.B.E., J.P. (chairman), who is appointed for the period ending March 31, 1951.

Appointed for the period ending March 31, 1950: Alderman David Beevers, J.P.; Prof. Andrew Moynihan Claye; Mr. W. M. Jones; Miss Elinor Gertrude Lupton, J.P.; Prof. William MacAdam; Prof. Thomas Talmage Read; Dr. John Elvin Rusby, *M.C.*, T.D.; Prof. Arnold Nixon Shimmin.

Appointed for the period ending March 31, 1951: Prof. Digby Chamberlain; Mr. Marcus Robert Hollings; Mr. Joseph Charles Hunter; Mr. William Wilson Powell; Rev. Canon Arthur Stretton Reeve; Mr. L. Richmond, C.B.E.; Mrs. I. Barbara Shaw; Mr. Richard Wheater, J.P.; Alderman Joseph Wilkinson, J.P.

Appointed for the period ending March 31, 1952: Mr. James Walker Booth; Mr. John Enrico Fattorini; Mr. Frederick J. Higginson; Dr. John Thornton Ingram; Dr. Bernard Mouat Jones, D.S.O.; Mr. Leslie Norman Pyrah, F.R.C.S.; Mr. Harold Abbot Ryott; Prof. Matthew John Stewart; Mr. Mark Whittock.

United Sheffield Hospitals.—Mr. A. Ballard (chairman), who is appointed for the period ending March 31, 1951.

Appointed for the period ending March 31, 1950: Alderman Alfred Buxton, J.P.; Mr. Edward Thornton Lemmon; Mr. J. Madin, J.P.; Mr. Percy Malby; Mr. Arthur Ratcliffe Martin; Mr. James Irvine Orme Masson, M.B.E.; Mr. Theophilus Pearson; Dr. Henry Renwick Vickers; Mr. Thomas Gilbert Sorby; Prof. Edward Johnson Wayne.

Appointed for the period ending March 31, 1951: Mr. James Victor Bibby, D.S.O.; Mr. Malcolm Brown; Mrs. Gladys Buxton, J.P.; Mr. John Lewis Anderton Grout, F.R.C.S.Ed., *M.C.*; Alderman Percy Judd; Dr. Balfour McKean; Mr. Frederick Marmaduke Osborn; Mr. Leslie Bonthron Patrick, F.R.C.S.Ed.; Mr. William Raymond Shirecliffe Stephenson; Mr. Gerard Francis Young.

Appointed for the period ending March 31, 1952: Mr. Ernest Anthony Barker; Sir Basil Gibson, J.P.; Mr. William James Lytle, F.R.C.S.; Dr. John Gibb McCrie, O.B.E., T.D.; Prof. George Lawrence Roberts; Prof. Charles Herbert Stuart-Harris; Alderman Mrs. Grace Tebbutt; Mr. John Wilford Trickett, J.P.

United Cambridge Hospitals.—Mr. Thomas Knox-Shaw, *M.C.* (chairman), who is appointed for the period ending March 31, 1951.

Appointed for the period ending March 31, 1950: Miss Anna McClean Bidder; Lady Bragg, J.P.; Mrs. Ethel Hepher; Mr. George Hawkins, O.B.E.; Mr. Geoffrey Fletcher Hickson; Mr. Ernest William Plumpton, J.P.; Rev. Prof. Charles Earle Raven; Dr. Claude Howard Whittle.

Appointed for the period ending March 31, 1951: Mrs. Ena Binfield; Mrs. Eleanor Margaret Charvet; Mr. Walter Maclaren Francis; Alderman Edward Thomas Halnan; Mr. Oswald Lloyd, F.R.C.S.; Mr. Roger Henry Parker, *M.C.*; Alderman Mrs. Emily Winifred Parsons; Mr. Alfred Stuart Howard Walford, F.R.C.S.; Rt. Hon. Henry Urmston Willink, *M.C.*

Appointed for the period ending March 31, 1952: Mr. Stephen Oswald Chivers, C.B.E.; Dr. Leslie Barrett Cole; Prof. Henry Roy Dean; Mr. Percy Frederick Dennard; Alderman Dr. Robert Ellis; Mr. Sidney George Newman; Mr. Vernon Charles Pennell, F.R.C.S.; Mr. H. J. Pye; Mr. A. L. Symonds, M.B.E., M.P.; Prof. Sir Lionel Ernest Howard Whitby.

United Oxford Hospitals.—Mr. Edmund Cecil Bevers, F.R.C.S. (chairman), who is appointed for the period ending March 31, 1951.

Appointed for the period ending March 31, 1950: Dr. C. W. Carter; Mr. Arthur Elliot-Smith, F.R.C.S.; Mr. Percy Gillians; Alderman Dr. Isabella Dron Harrison-Hall, J.P.; Mr. Aubrey Freeman King; Mr. Ronald Graeme Macbeth, F.R.C.S.Ed.; Mr. Leonard Vincent Murphy; Miss Rosemary Spooner; Dr. Arthur Quinton Wells.

Appointed for the period ending March 31, 1951: Dr. Edward Miller Buzzard; Sir Henry Clay; Prof. Arthur Duncan Gardner; Mr. John J. Johnson, C.B.E.; Mr. Alfred William Henry Booth King; Mr. James Christopher Scott, F.R.C.S.; Mr. Edgar Alfred Smewin, J.P.; Mr. Ralph Frederick Symonds, O.B.E., T.D.; Dr. Janet Maria Vaughan, O.B.E.; Dr. John Christopher Wharton.

Appointed for the period ending March 31, 1952: Mr. Leonard Bertie Guy Bellinger; Prof. Sir Hugh Cairns; Dr. Alexander Macdougall Cooke; Mr. H. A. Goddard; Mr. Gilbert Ernest Cecil Holt, J.P.; Mr. William Robert Robins, J.P.; Mr. John Thomson, T.D.; Alderman Lady Townsend, J.P.; Prof. L. J. Witts.

United Bristol Hospitals.—Mr. Charles Cyril Clarke (chairman), who is appointed for the period ending March 31, 1951.

Appointed for the period ending March 31, 1950: Prof. Arthur Ivan Darling; Mr. Philip William Hort; Miss I. M. Lobb; Alderman John James Milton, J.P.; Sir Philip Robert Morris, C.B.E.; Mr. Anthony Gurdon Palin, F.R.C.S.Ed.; Lady Sinclair; Mr. Herbert Bland Stokes; Miss Helen Strimer.

Appointed for the period ending March 31, 1951: Mr. Gilbert Charles Bennett; George Travers Biggs, D.S.O.; Prof. Robert James Brocklehurst; Mr. G. T. Bullock, M.B.E.; Prof. Albert Victor Neale; Rev. K. L. Parry; Dr. Sydney Kilshaw Rigg; Mr. Harry Leslie Shepherd, F.R.C.O.G.; Lady Wills, J.P.

Appointed for the period ending March 31, 1952: Mr. George Alton Watson Allan; Mr. Egbert Cadbury, D.S.C., D.F.C., J.P.; Mr. William James Carter; Mr. Geoffrey Molyneux Fitzgibbon, F.R.C.S.; Dr. James Herbert Grove-White; Mr. John Angell James, F.R.C.S.; Prof. Robert Hughes Parry; Prof. Charles Bruce Perry; Mr. Herbert George Tanner.

United Cardiff Hospitals.—Mr. Gilbert David Shepherd, M.B.E., J.P. (chairman), who is appointed for the period ending March 31, 1951.

Appointed for the period ending March 31, 1950: Alderman Joseph Dicks; Mr. Douglas Benjamin Evan Foster, F.R.C.S.; Alderman James Griffiths, J.P.; Mr. Alex Samuel William Johnson, J.P.; Sir Ewen J. Maclean, T.D., J.P.; Mr. Samuel Ralph Marsh; Mr. Ernest Vivian Rogers; Mr. Edward E. Tompkins, J.P.; Dr. Arthur Goronwy Watkins.

Appointed for the period ending March 31, 1951: Alderman Sydney Jones; Mr. Robert Davies Owen, F.R.C.S.Ed.; Alderman Oliver Cuthbert Purnell, C.B.E., J.P.; Alderman Mrs. Dorothy M. Rees; Alderman Richard Gruffydd Robinson, J.P.; Prof. G. I. Strachan; Mr. Ernest Tear, J.P.; Sir Ivor B. Thomas, J.P.; Mr. James William Tudor Thomas, F.R.C.S.; Alderman the Rev. William Degwel Thomas.

Appointed for the period ending March 31, 1952: Sir Frederick J. Alban, C.B.E., J.P.; Mrs. Helena Evans; Mr. Harold Finch; Prof. Jethro Gough; Mr. Charles James Hardwicke; Mr. Sidney Mitchell; Prof. Ralph M. F. Picken; Sir W. Reardon-Smith, Bt., J.P.; Dr. Thomas Roger Rees; Prof. Lambert Charles Rogers.

United Birmingham Hospitals.—Mr. Stephen France Burman, M.B.E. (chairman), who is appointed for the period ending March 31, 1951.

Appointed for the period ending March 31, 1950: Mr. George Ball; Alderman Albert Frederick Bradbeer; Mr. D. Bulgin; Prof. Philip Cyril Powter Cloake; Mr. John Fairfax Crowder; Alderman Mrs. Elsie May Farley, J.P.; Prof. Humphrey Francis Humphreys, O.B.E., *M.C.*, T.D.; Mr. Raymond Edward Priestley, *M.C.*; Alderman Arthur James Stanley.

Appointed for the period ending March 31, 1951: Mr. Alphonsus Liguori d'Abreu, O.B.E., F.R.C.S.; Miss Edith Madge Barling, M.B.E.; Mr. Thomas Austin Hamilton Baynes, J.P.; Alderman William Tegfryn Bowen; Mr. C. L. Chatwin; Alderman Walter Leslie Dingley; Mr. Vernon William Grosvenor, J.P.; Prof. Hilda Nora Lloyd; Mr. William Henry Newton; Mr. William James Simpson.

Appointed for the period ending March 31, 1952: Mr. Raleigh Robert Adam; Dr. Arthur Beauchamp; Mr. Keith Mindelsohn; Mrs. Helen Murtagh; Prof. Sir Leonard Gregory Parsons; Mr. T. Patterson; Mr. Baron Theodore Rose, F.R.C.S.; Mrs. Rachel Jane Smith; Prof. Arthur Peregrine Thomson; Mr. Eric Wilfred Vincent.

United Manchester Hospitals.—Mr. Colin Marshall Skinner (chairman), who is appointed for the period ending March 31, 1951.

Appointed for the period ending March 31, 1950: Mrs. Jean Currier; Dr. Ogilvie Maxwell Duthie; Alderman Joseph Eastham, J.P.; Mr. Eric Christopher Carlyon Evans, M.B.E.; Mr. G. H. Goulden; Mr. Graham Halbert; Prof. H. S. Raper, C.B.E., F.R.S.; Sir John Stopford; Prof. Frank Clare Wilkinson.

Appointed for the period ending March 31, 1951: Dr. William Brockbank; Mr. Percy Chadwick, J.P.; Mrs. Mabel Evans, J.P.; Mr. Thomas Mark Larrad, J.P.; Mr. Harry Lord; Prof. Sir Harry Platt; Prof. W. J. Pugh, O.B.E.; Mr. James Sillavan; Prof. Andrew Topping, T.D.; Very Rev. Garfield Hodder Williams, O.B.E.

Appointed for the period ending March 31, 1952: Mr. Norris Montgomerie Agnew; Mr. William Chadwick; Dr. Eric Arthur Gerrard; Mr. Stuart Hirst Hampson, *M.C.*, M.B.E.; Mr. Kenneth Graham Holden; Mr. Robert Lord Holt, F.R.C.S., O.B.E.; Mr. Joseph Kershaw; Mr. Robert Leech Newell, F.R.C.S.; Mr. William Onions, J.P.; Prof. Robert Platt.

United Liverpool Hospitals.—Sir Richard Harold Armstrong (chairman), who is appointed for the period ending March 31, 1951.

Appointed for the period ending March 31, 1950: Mr. John Pye Bibby; Prof. Henry Cohen, J.P.; Mr. Thomas Henry Herron; Miss Mary Jones, O.B.E.; Mr. Thomas Keeling, J.P.; Mr. George Leather, J.P.; Mr. Thomas McDonald; Mr. James Bagot Oldham, F.R.C.S.; Dr. Prof. Hubert Horace Stones.

Appointed for the period ending March 31, 1951: Mrs. D. Barton, M.B.E., J.P.; Mr. Albert Nicholas Denaro, M.B.E., J.P.; Miss

Averill Doris Eills, M.B.E., J.P.; Prof. William Mowll Frazer, O.B.E.; Prof. Thomas Norman Arthur Jeffcoate; Alderman William John Lucas, J.P.; Mr. John Tertius Morrison, O.B.E., F.R.C.S.; Prof. Edwin Augustine Owen; Dr. Percy Henry Whitaker.

Appointed for the period ending March 31, 1952: Mr. Frederick Bidston; Mrs. Elizabeth M. Braddock, J.P., M.P.; Prof. Norman Brandon Capon; Dr. Robert Coope; Mr. A. Elliott, J.P.; Mr. Arthur Alexander Gemmell, *M.C.*, F.R.C.S.Ed.; Mr. George Jennings; Dr. T. A. Jermy; Mr. James Frederick Mountford; Sir John Nicholson, Bt., C.I.E.; Mr. William Sutcliffe Rhodes, J.P.

MEDICAL BIRTHDAY HONOURS

The names of the following members of the medical profession were included in a Birthday Honours List published in *Supplements* to the *London Gazette* on June 10:

Barony

Sir ALFRED EDWARD WEBB-JOHNSON, Bt., K.C.V.O., C.B.E., D.S.O., T.D., M.B., Ch.B. Surgeon to H.M. Queen Mary. President of the Royal College of Surgeons of England since 1941.

K.B.E. (Military Division)

Air Vice-Marshal ALAN FILMER ROOK, C.B., O.B.E., F.R.C.P., D.P.H., R.A.F. Honorary Physician to the King. Consultant in Medicine to the Royal Air Force.

Knighthood

WILLIAM GILLIATT, C.V.O., M.D., M.S., F.R.C.P., F.R.C.S. President of the Royal College of Obstetricians and Gynaecologists.

JOHN NEWMAN MORRIS, C.M.G., M.B., B.S., F.R.A.C.S. Chairman of National Council of the Australian Red Cross. For outstanding services in Red Cross matters and voluntary hospital work in the State of Victoria.

DAVID THOMAS ROCYN-JONES, C.B.E., D.L., M.B., C.M., D.P.H., J.P. For public services in South Wales.

C.B. (Military Division)

Surgeon Rear-Admiral OWEN DEANE BROWNFIELD, O.B.E., M.B., B.S. Honorary Physician to the King.

Major-General JEREMIAH JOHN MAGNER, *M.C.*, M.B., B.Ch., D.M.R., late Royal Army Medical Corps.

C.B. (Civil Division)

CHRISTOPHER FRANK GOOD, M.R.C.S., L.R.C.P. Principal Medical Officer, Insurance Medical Service, Ministry of Health.

C.M.G.

JOHN CECIL RANKIN BUCHANAN, M.D., F.R.C.P.Ed., D.T.M. and H., Colonial Medical Service. Director of Medical Services, Fiji, and Inspector-General, South Pacific Health Service.

PERCY STOCKS, M.D., F.R.C.P., D.P.H. Chief Medical Statistician, General Register Office.

C.B.E. (Military Division)

Surgeon Captain FREDERICK GEORGE HUNT, M.B., B.Ch., R.N.

Air Commodore ERIC ALFRED LUMLEY, *M.C.*, M.D., B.Ch., D.P.H., D.T.M. and H., R.A.F.

C.B.E. (Civil Division)

JOHN HENRY BIGGART, M.D., D.Sc. Professor of Pathology and Dean of the Faculty of Medicine, Queen's University, Belfast.

CHARLES SAMUEL CURTIS, M.D., Medical Director and Superintendent of Newfoundland Medical Service.

FRANK ARNOLD GUNASEKERA, O.B.E., M.R.C.S., L.R.C.P. Senator, formerly Officer Commanding, Ceylon Medical Corps.

EDWARD ROWLAND ALWORTH MEREWETHER, M.D., F.R.C.P., D.I.H. Senior Medical Inspector of Factories, Ministry of Labour and National Service.

JOHN ERNEST ALFRED UNDERWOOD, M.B., B.S., D.P.H. Principal Medical Officer, Ministry of Education.

O.B.E. (Civil Division)

WILLIAM DAVID BATHGATE, *M.C.*, L.R.C.P. and S.Ed., Medical Superintendent, Hospital of the Edinburgh Medical Missionary Society, Nazareth, Palestine.

AGNES ELIZABETH LLOYD BENNETT, M.B.E., M.D. For services as medical practitioner in Wellington.

JOHN ROBERT BLAZE, L.M.S., Senior Physician, General Hospital, Colombo.

PERCY LESLIE FOOTE, F.R.C.S.Ed., Medical Superintendent, Buller Hospital, New Zealand.

JAMES JOHN JOSEPH GIRALDI, M.D. Physician, King George V Hospital, Gibraltar.

CHARLES NORMAN GRIFFIN, M.B.E., M.D., Colonial Medical Service. Federal Senior Medical Officer, Leeward Islands.

WILLIAM ARTHUR EDWARD KARUNARATNE, M.D., Professor of Pathology, General Hospital, Colombo.

SHANKAR DHONDO KARVE, M.B., B.S. For public services in Kenya.

ROBERT KIRK, M.D., F.R.F.P.S., D.P.H., Bacteriologist, Sudan Medical Service.

Mrs. ELIZABETH JOSEPHINE LE SUEUR, M.B., B.Ch., D.P.H., D.T.M. and H., Lady Medical Officer, Sarawak.

EDOWO AWUNOR RENNER, M.B., Ch.B., Senior Medical Officer, Sierra Leone.

GEORGE FRANCIS THOMAS SAUNDERS, M.D., Colonial Medical Service. Senior Medical Officer, Gold Coast.

THOMAS EDMONDSTON SAXBY, F.R.F.P.S., J.P., Medical Practitioner, Unst, Shetland.

Honorary O.B.E. (Civil Division)

LAWRENCE MICHAEL EKEN RICHARD HENSHAW, M.B., Ch.B., D.T.M., Medical Officer, Nigeria.

M.B.E. (Civil Division)

SYBIL KATHLEEN BATLEY, M.R.C.S., L.R.C.P., Medical Superintendent, Church Missionary Society, Onitsha, Nigeria.

GEORGE ERIC WARNER LACEY, M.B., B.S. Admiralty Surgeon and Agent, Woolwich.

Knighthood for C. R. Harington, Ph.D., F.R.S.

The honour of knighthood was also conferred on Charles Robert Harington, Ph.D., F.R.S., Director of the National Institute for Medical Research.

TRAINING OF NURSES

The General Nursing Council for England and Wales has submitted to the Minister of Health a memorandum on the Report of the Working Party on the Recruitment and Training of Nurses (Sept. 13, 1947, p. 426). The Council advocates three years of training instead of the two years recommended by the Working Party, considering that it would be impossible to cover the suggested syllabus in the time. Candidates should undergo the G.N.C.'s test examination before entering the training school if they do not hold the requisite qualifications; they should have a comprehensive medical examination and also be interviewed by the matron. No candidate should start training before the age of 18. Student nurses should be on duty (including theoretical training) for not more than 96 hours a fortnight.

Discussing the wastage during training that the Working Party emphasized in its report, the Council considers that the statistics which the Working Party used are misleading because they relate largely to the war years, when many girls entered the profession to avoid being directed to other work. "Dislike of contact with sick people" is an important cause of wastage not discussed by the Working Party, and the G.N.C. points out that since June, 1947, this reason for discontinuing training has been returned by 63 out of 311 student nurses. Unfortunately it is discovered only after training has started. On the subject of discipline of student nurses, which was discussed at length by the Working Party and by the organizations that have commented on its report, the G.N.C. emphasizes that "discipline to a certain degree" is essential, but that the rules should be accepted and appreciated as necessary to the welfare and comfort of those living in the nurses' home.

In recent years student nurses have had to undertake work that would normally be performed by the domestic staff; the Council deplores this and considers that students ought only to care for nursing equipment and do such domestic duties as are part of the training. It asks the Minister of Health, and through him the Minister of Labour, to help in the urgent recruitment of ward orderlies and domestics.

Seventeen delegates from Belgium, China, Eire, France, Holland, Switzerland, and Sweden, with a power of attorney from Finland, and fifteen from this country, attended the meeting after the sixth annual conference of the British Pharmaceutical Students' Association to discuss the formation of a world federation of student pharmacists. Russia ignored the invitation. Five weeks before the meeting Czechoslovakia promised to send delegates; none arrived. Hungary, after agreeing to be present, wrote asking for an official invitation to allow delegates to get permits to leave the country. Nothing more was heard of them.

Reports of Societies

CO-OPERATION BETWEEN PHYSICIAN AND PSYCHIATRIST

Need for Team Work

A discussion on co-operation between the physician and the psychiatrist in psychosomatic medicine took place at a meeting of the Section of Medicine of the Royal Society of Medicine on May 25.

Dr. MAURICE DAVIDSON, president of the Section, said that the expression "team work" as applied to medicine had become very popular in recent years. Real team work implied some sacrifice of immediate personal interest, and this in an age of materialism and opportunism was not always easy. Yet it was necessary to realize this ideal if British medicine was to maintain its great reputation. Co-operation between colleagues was essential to full understanding of the problems which arose in any branch of medicine, and especially in the one they were discussing that evening.

The crystallization of ideas which began with the pioneer work of Freud and his disciples led to the formal recognition of psychiatry as a branch of medical science, but the basic idea of psychosomatic medicine had been recognized for centuries. In the Section of Medicine they had much to learn from their colleagues in the Section of Psychiatry. What he was anxious to elucidate was a clear idea of the proper scope and the necessary limitations of the physician and the psychiatrist alike in dealing with the various disorders of health in which their functions must inevitably overlap. In his student days many patients who sought medical advice because of symptoms for which no corresponding structural change could be discovered were often abruptly dismissed as "functional." Yet they were none the less sick people, and would often go the round of hospitals seeking relief.

This extreme example of professional obtuseness was perhaps less prominent now that psychology had come into its own. The real problem was primarily a question of co-operation between teaching physicians and psychiatrists. Much excellent advice on this point was to be found in medical literature, but the carrying out of such principles was confined to comparatively few in the profession, and when it was encountered it seemed to spring from some rare faculty inherent in the individual practitioner. Mental worry accompanying cardiovascular hypertension, duodenal ulcer, and progressive polyarthritis might be mentioned as examples of psychosomatic problems. The effect of severe emotional shock or prolonged mental strain in precipitating the manifestations of a dormant tuberculous lesion in the lung was well known.

In days gone by the old family physician made no claim to be a psychiatrist. He was a sort of combination of medical adviser and father confessor. His knowledge was mainly empirical, but he had a shrewd insight into human nature and recognized as part of his vocation the need to bring this insight to bear upon the problems on which his patient sought his advice and looked to him for guidance. He could not help thinking that in many ways he gave them better service than some of their modern specialists who had been so trained in physiology and biochemistry and other things that they had lost the practical art of handling and managing the affairs of a sick person. There were borderline cases in which the lack of really practical discussion between colleagues resulted in endless misunderstanding.

Levels of Intelligence

Dr. G. W. B. JAMES said that the interest of physicians in psychiatry was comparatively recent. During the war it was his privilege to meet physicians from all parts of the Commonwealth as well as from allied countries, and he felt bound to record that the doctors of the Empire, with very few exceptions, were bewildered by the psychiatric casualty. They looked upon him with distaste and were quite unable to deal with him effectively. As a last resort they put some strange labels upon him, such as "bomb-blast conjunctivitis" covering hysterical blindness, and "battle exhaustion of left leg" for hysterical monoplegia. Neither the students of medicine nor their teachers were enthusiastic about psychosomatic medicine, and that was as true to-day as it was when Socrates deplored the lack of study of the psychic aspects of disease.

What could the psychiatrist do to help the physician in dealing with psychosomatic disorders? He would place first the psychiatrist's ability to demonstrate the importance of assessing the level of intelligence in psychosomatic cases. The somatic disease itself might be a reflection of low intelligence and inability to safeguard health by the normal restraints and precautions of civilized living (e.g., venereal diseases and many skin diseases and infestations). Again, a low level of intelligence was often found in people who expressed by somatic symptoms an emotional unhappiness and dissatisfaction with their environment. It was asking too much of the psychiatrist to send him a patient who was so far below the average intelligence as to make any form of successful psychiatric treatment an impossibility. The unfortunate psychiatrist might then very often have to accept the unjustifiable blame for therapeutic failure. Out-patient departments were very much used by persons of subnormal intelligence with all sorts of somatic complaints who were helped through life by the physician's bottle of medicine and his cheery or his bad-tempered encouragement—it did not matter much which—and neither physician nor patient was aware of the true state of affairs. Subnormal intelligence was often linked with emotional instability, and this was still not adequately appreciated by their colleagues in medicine.

Surprised Physicians

Physicians were surprised and interested to find that in many, if not all, psychosomatic patients there were certain constant features in the history. The same illness or one like it had often occurred before, and this gave the opportunity to investigate the emotional background on its first appearance. Psychosomatic illness would be found to have occurred in other members of the family. Occupations had been changed significantly and frequently. There might be a family history of quarrels, divorces, illegitimacy, the orphaned child, and so on. At St. Mary's, of the last 449 cases referred to the psychiatric department, 20% might fairly be called psychosomatic; of these, half were found suitable for special treatment, and half those treated made a reasonable recovery, returning to normal work and becoming contented with their family surroundings. The sort of cases which were referred over and over again were patients with asthma, gastro-intestinal disorders—such as anorexia and colitis—impotence, dyspareunia, as well as cases of depression and hysteria. The recovery rate compared not unfavourably with that of other medical departments.

Psychiatric treatment had certain attributes which he thought a psychiatrist was entitled to emphasize. The psychiatrist was helped by a team not every member of which was medically qualified. It included social helpers of various kinds. In psychosomatic cases the emotional life and environment of the patient were quite as important as the bodily disorder. Indeed, if these aspects were neglected by the doctors they might just as well recommend their students to take their qualifications at the Royal College of Veterinary Surgeons.

Dr. James went on to speak of treatment. Physical methods of treatment were in process of revolutionizing the mental hospital. The fact that the methods were empirical in no way reduced their value in practice. The psychiatrist badly needed the help of his scientific medical colleagues in the closer investigation of such methods. One point to be remembered was that the psychiatric patient arriving at hospital was not an acutely sick person in the sense of a patient with pneumonia; he was suffering from a condition which might well have had its origin in infancy and have been incubating for many years. He hoped that physicians would have experience of psychiatry as part of their own medical training. The best way to know the mind of a patient was to know one's own. Dr. James advised a training analysis for the physician. In this way he would gain insight not only into the way to treat psychosomatic and other psychiatric cases, but into the aetiology of certain bodily ills beginning in the primitive developing mind of the infant. The first step to a condition like duodenal ulcer might

be in the developing mind, and then in process of time, when the character of the ulcer-prone individual was fully formed, the somatic would add itself to the psychic element.

Physicians and psychiatrists united were probably the best hope of a sick world. Man was carrying to-day an immense load of emotional disability. He was lamentably unable to manage his affairs, with his fears and guilts and hates and aggressions. He lived by outworn standards imposed upon him by his grandparents, and it was not surprising that he often found relief in psychosomatic illness.

Prickly Psychiatrists

Dr. J. S. RICHARDSON said that the realization that certain well recognized and frequently encountered diseases which had been accepted as organic since they were first described had in fact a largely psychological basis was comparatively new. The missionary spirit of some psychiatrists made them at times prickly companions, especially when their enthusiasm outran the limits of their subject and even of their capacity. He wondered how long it took psychiatrists to achieve success where success was achieved. And what about the cases that relapsed? The picture they had been given by Dr. James of the grumpy physician doling out his bottle of medicine and yet being followed by his patient for years was true, but how much less good was his treatment than that of the sympathetic gentleman tête-à-tête with the patient, using techniques which were dramatic and doubtless effective, and how vulnerable were these patients to influences which were outside any doctor's control.

The general physician's relationship to the psychiatrist was the same as to any other specialist. He would seek his help as he would that of the surgeon or neurologist. Some patients mistrusted specialists and feared that certain aspects of their cases were apt to be overlooked by them. There were those who resented the suggestion that they should attend the psychiatric department, or felt a sense of shame or failure when this was broached. There would be something wrong with a society which allowed an individual to accept too willingly a psychiatric basis for his complaints. These prejudices contained something of value and furnished an additional reason why the physician should be as competent as possible to deal with such cases himself. He hoped the term "psychosomatic medicine" would fall into disuse, and that the physician and psychiatrist would come to use the word "medicine" in the same sense.

General Discussion

Dr. NOEL HARRIS said that the study of psychology should be incumbent on all who took up medicine, just as much as the study of anatomy and physiology. It was unfortunate that psychology had been thought of too much in the past in connexion with the study of psychiatry alone. Dr. RALPH NOBLE said that the psychiatrist, who of course had been trained as a physician, did examine his patient physically. As to how long it took the psychiatrist to achieve success, the best estimate was obtained by observing the cases treated in the wards of general hospitals by psychiatrists. In this country there were very few hospitals which had beds allocated to properly trained psychiatrists, but in America every good hospital had such beds. Not all patients needed a long treatment to get results by the usual methods now in vogue.

Dr. J. B. MURRAY said that the explanation of the majority of psychosomatic manifestations could be found if one chose to look to one's methods of history-taking and examination of the patient. Dr. DAVID SHAW considered that nothing could be more conducive to keeping the two Sections further apart than the suggestion that every physician should have a training analysis. More emphasis ought to be placed on the need for making psychiatrists better general physicians than for making physicians analytically minded.

Dr. J. RICKMAN said that the first tool of research was history-taking, and the first thing to be considered in taking a history was the cause which had brought about the illness. The technique for getting a fairly satisfactory psychosomatic history was to listen to the patient. If the psychiatrist pulled a lot of information out of the patient, he must give back to his patient—the doctor–patient relationship being a two-way traffic—something of what he had taken out. The patient would understand better, if he was allowed to talk, how he came to be in the position in which he was, and the psychiatrist must be willing to tolerate information which at that time he felt to be irrelevant. The capacity to listen to a patient in suffering was the only way by which the physician would begin to see the patient completely as a live person. Dr. CECILY HINGSTON and Dr. MARGARET LOWENFELD spoke of the importance of child psychiatry, the latter deploring the lack of co-operation between the physician and psychiatrist in this respect.

Finally a surgeon present related a personal experience. Many years ago as a young man he had ambitions to be a huntsman, and particularly to wear a brown tail-coat and canary yellow breeches, but a fall from his horse and a severe injury to his back put a stop to his career in that direction. He made a good recovery and had enjoyed excellent health, but a few days before that meeting, in the high street of Billericay, he saw the hunt pass through, headed by a lady wearing a brown tail-coat and canary yellow breeches, whereupon he was immediately seized with excruciating pains in the back, which continued for the whole of that day. At night he took an aspirin and applied a hot-water bottle, and next morning the pain had completely gone. Ought he to have been analysed?

THE GREEN MONKEYS OF ST. KITTS

Dental Instability

An interesting piece of special dental research was brought to the attention of the Odontological Section of the Royal Society of Medicine on May 24 by Sir FRANK COLYER, when he demonstrated in the museum of the Royal College of Surgeons the dental condition of the green monkeys of St. Kitts. It is well known, of course, that New World monkeys differ from Old World monkeys; apart from other anatomical variations, New World monkeys have three bicuspid or premolar teeth on each side, both in the upper and lower jaw, whereas the Old World monkeys have only two. But the green monkeys of St. Kitts (*Cercopithecus aethiops sabaeus*), very small animals, exhibit a great capacity for dental variation, the result doubtless of environment, though to what extent a hereditary factor may also be implicated does not seem to be known.

Sir Frank Colyer has succeeded in obtaining a considerable number of the skulls of these monkeys, which reveal a frequency of dental variation three or four times as great as a numerically comparable group of African monkeys. The variations include, in one example, a supernumerary tooth posterior to the mandibular right molar; in another, an abnormal position of the maxillary incisors; in others again, rotation of the right maxillary second premolar and the mandibular third molar, and also projection of the first incisors and inward displacement of the second premolars. The third molar normally has three well-developed and separated roots, but these roots were shown in some of these examples to be in various stages of fusion. Evidence of caries of the right maxillary third molar was shown in one instance.

These animals are apparently in a state of dental instability, a state which alternates with dental constancy in various species. As for the cause of these numerical and positional variations, the sugar cane in this West Indian island obviously suggests itself. The monkeys have a habit of tugging at the sugar cane, the wear being mainly on the premolars. How far has this habit modified dental structure and produced anomalies? Whatever the explanation, this study has resulted in a further valuable addition to the priceless odontological collection at Lincoln's Inn Fields, which owes so much to Sir Frank Colyer's painstaking enthusiasm.

A school for the treatment and education of Scottish children suffering from cerebral palsy will be established this year in Edinburgh by the Scottish Council for the Care of Spastics. The Scottish branch of the British Red Cross Society is providing financial support, and it has bought for the Council a house in the Murrayfield district of Edinburgh. It is hoped to provide a hostel where parents can stay while learning how to care for their children. Research and the training of specialists will also be carried out. Dr. A. M. Fraser, Honorary Secretary of the Council, initiated the Scottish plan.

Correspondence

The Red Cross and St. John during War

SIR,—At the request of the Army Council and, subsequently, of the War Office and the Ministry of Health, the Joint War Organization of the British Red Cross Society and the Order of St. John opened during the war years some 250 establishments in England and Wales. These comprised convalescent hospitals, auxiliary hospitals, convalescent homes, and residential nurseries. Many establishments providing simple convalescent amenities became hospitals organized for curative and rehabilitative treatments. Well over half a million patients passed through these hospitals and homes. They included officers and men of the British, Dominions, Indian, and Allied Forces, and members of the Women's Auxiliary Services; civilians injured by air attack; infants to 5 years of age and children from that age to 14, all in some way victims of the war.

Of the value of these establishments, Lieut.-Gen. Sir Alexander Hood, D.G.A.M.S., wrote: "No praise can be too high for the services rendered to the Army by the Hospitals and Medical Services Department of the War Organization, which has provided care and comfort for thousands of officers and men and done so much for their restoration to normal health and strength." Two Ministers of Health also expressed appreciation. Mr. Willink, describing their assistance as invaluable, said, "But for the willing help given at all times by the auxiliary hospitals the work of the Emergency Hospital Scheme could not have proceeded so smoothly." Mr. Aneurin Bevan described them as "a great boon not only to the soldiers but also to men and women of other Services and, to a certain extent, to civilians. No trouble," he added, "has ever been too great for workers in this field to take to secure the comfort and well-being of the patients, and I know that a great deal of very willing voluntary service was rendered."

A number of these convalescent homes were continued after the end of the war, at the urgent request of His Majesty's Government, under the administration of the Joint Committee St. John and Red Cross. The last remaining home will close its doors on July 4, and we are most anxious to take this opportunity of expressing in your columns our deep gratitude to all those who made possible this remarkable contribution to the healing and restorative services of the war. To Lord Horder and Sir Alfred Webb-Johnson, joint chairmen of the Medical Department of the War Organization which administered the homes, and to the individual doctors and surgeons who gave so much devoted and gratuitous service, we desire to express on behalf of the Society and the Order our profound and sincere thanks.—We are, etc.,

CHETWODE,
Field Marshal
Chairman of the Executive Committee,
War Organization Red Cross and St. John.

WOOLTON,
Chairman of the Joint Committee
St. John and Red Cross.

Where Are We Going?

SIR,—My article on this subject (March 13, p. 485) has brought me a large number of letters from all parts of Great Britain and also from Norway, Canada, and the U.S.A. All my correspondents express full agreement and share my alarm at the prospect before us. Many adduce evidence from their own experience in support of my contentions. Some have asked for reprints for distribution among laymen, and some have suggested that I should express my views more fully in a book.

The only discordant note has come from the medical photographers, whom I have wrongly called clinical photographers. My expression, "The Fetish of Perpetual Expansion," Dr. Peter Hansell (April 3, p. 664) considers "curious." If plain English puzzles him it is beyond my powers to explain anything to him. My remarks about Pasteur, Thomson, and Hopkins he thinks facetious. I can assure him they were written in deadly earnest. Dr. R. G. W. Ollerenshaw (March 27, p. 618) is aggrieved because I took the medical photographers at their word and assumed that they mean what they say.

Of course advances in photographic art should be used for the benefit of health. No one wants to use cracked or faded slides. No one wants to "do it the hard way" when there is an easier, though some can achieve better results by the cheaper way than others can by the more expensive. It is all a matter of proportion. Medical photography must be subsidiary to medicine, not the reverse, which is what the extravagant demands of at least some medical photographers threaten.

If photographs are intended for books the cost is usually passed on to the purchaser. Sometimes the author sells at a loss, hoping to recoup himself by increased private practice, greater prospects of promotion, or merely admiration, glory, or pride in achievement. In such cases the cost comes out of his own pocket. When photographs are produced by commercial firms the directors and shareholders can be trusted to see that so far as they are concerned there is a profit either direct or indirect.

Expenditure on medical photography by the State is justified only in so far as the outlay may be expected to lead to an improvement in medical practice, resulting eventually in a diminution in the incidence and cost of disease. It is not justified if used for the personal gratification of those whose clinical achievements are thereby recorded.

Some may believe that medical photography has an aesthetic value. The beauty of disease (and certain aspects of disease are, like other manifestations of nature, extremely beautiful) may inspire those possessed of an artistic sense to great heights of achievement. Should they be actuated by this motive medical photographers must carry out their work at their own expense, unless they can convince the Arts Council or some similar body that their activities are calculated to elevate public taste and artistic perception.—I am, etc.,

Cambridge. FF. ROBERTS.

Hearing-aids in New Zealand

SIR,—The annotation (Dec. 6, 1947, p. 916) concerning the research work carried out by committees appointed by the Medical Research Council is very interesting. Owing to innumerable and often pathetic complaints as to the quality, service, and battery costs of imported hearing-aids, the New Zealand League for the Hard of Hearing in 1940 requested the help of the New Zealand Standards Institute, a department under the Ministry of Industries and Commerce. The first meeting of electro-acousticians, otologists, manufacturers, vendors, battery manufacturers, the Social Security Department, and the League was called in that year.

It issued its first Standard Specification in 1940. This was revised at several subsequent meetings, and in October, 1947, New Zealand Standard Specification 486 was issued under the authority of the Minister for Industries and Commerce. Hearing-aids conforming with the specification and issued with the stipulated guarantee as to quality, service, and battery running costs were entitled to bear the New Zealand Standards Mark. This was ignored by the vendors of imported aids, which, apart from other differences, were designed to take batteries of special shape to fit only their own aids.

The Government, having announced its policy of issuing free or subsidized hearing-aids, had an investigation made by the Minister of Finance, which noted the unduly high prices charged for imported hearing-aids. These on examination were all proved to have their essential components—viz., microphones, amplifying valves, and crystal earphones—made by firms in America who held world patents over them. These firms did not make or sell hearing-aids, but supplied the essential components to manufacturing vendors (or allowed them to construct under licence), who architectured them together on principles well known to acoustical science.

The Government called for tenders and accepted one called the "Universal" hearing-aid, which complies with the New Zealand Standard Specification and gives the specification guarantee for maintenance, service, and battery running costs for twelve months.

The Harvard Psycho-Acoustical Committee in its preliminary report on the selection of hearing-aids (*Laryngoscope*, 1946, **56**, 81) drew attention to the fact that all valve-model aids made by reputable firms were of equal efficiency. Their design objective differs only in minor matters from the New Zealand Standard Specification 486. The New Zealand Universal model is bought by the Government at £15, inclusive of the crystal earphone with a sensitivity of 5 bars per volt, and an individually moulded ear-canal insert, batteries, battery containers, instruction booklet, carton, a guarantee of twelve months for service, and an estimate of yearly battery costs when the aid is used for six hours a day.

The Universal aid contractors also supplied special types of aids for cases where direct-insertion ear moulds cannot be used or are inadvisable, bone-conduction aids where required (about one case in a hundred), and special high-power aids of wearable type for cases of very severe loss giving high undistorted output for higher than usual speech "inputs." By means of a Universal battery holder, different sizes and weights of B batteries can be used. Two sizes of A battery or torch cells C or D can be used. This provides the necessary compromise between size, weight, and operating costs.

The Government then authorized the establishment of hearing-aids clinics at public hospitals to issue, under a qualified staff, free aids to all persons irrespective of age who had an average loss of 35 decibels over the frequencies of 512 to 4,096 inclusive. At the clinics, if the patient wants another aid from any outside firm, it has to be passed by the clinic officers, must carry the New Zealand Standard Mark, and give the written guarantee as to quality, maintenance, and battery costs if the aid is run for six hours a day. This brought to bay and severely limited the activities of vendors whose advertisements and previous disregard of the Standard Specification were tinctured with callous disregard for the welfare of the hard of hearing. The distribution costs were claimed by vendors to be 100% to 150% of the wholesale price. This has been eliminated in distribution by hospital clinics. The cost of the latter is offset by the civil rehabilitation of many persons who were socially and economically depressed.

In the annotation is the statement, "It is, however, necessary to stress that many of the deaf included in this number (half a million in Britain) belong to the higher age groups. In them deafness is often due to senile and other degeneration of the internal ear, and so can seldom be satisfactorily corrected by electrical hearing-aids." We also thought so, but have been surprised at the very few who cannot be helped. We have also been surprised at the number of hard of hearing who had not contacted the various branches of the League. At the Auckland clinic, which started on Nov. 1, 1947, of the first 258 applicants for free aids the ages varied from 20 to 90 years. The greatest number were in the age group of 40 to 70 years. Their average hearing loss was 69 decibels.

In general, they had not had a hearing-aid because of their prohibitive costs, or have been dissatisfied with their efficiency, or have been unable to bear the expense of maintenance and battery supply. Most of them have been badly advised or given a hopeless outlook. Above all, they avoided the constant strain of trying to understand or get the context of what the speaker was saying. They have resigned themselves to practical seclusion, and withdrawn from group conversation lest they disclose their infirmity. The fact that they were in the main the first applicants for aids shows the urgency of their plea for help. In the first six hundred issued they form a mass that shows a concealed national tragedy and a hitherto lost legion.

For testing the hearing the clinic has a room that is reasonably sound-proof, and a Western Electric 6A audiometer. The League sound-proof room has an audiometer of local make which is also periodically calibrated and gives similar readings to the Western Electric. The presence of a supervising acoustical engineer has greatly contributed to the smooth running of the department. There are six distribution clinics in the Dominion and others are in the process of being set up. Over 90% of the patients have taken the Universal aid. Their delight in its efficiency is very gratifying. The other 10% have amongst them some persons who were unaware of the quality of the Government aid and were induced to give the £15 subsidy to the vendors and pay up to £30 additional money.

Determined efforts are being made by practically all hearing-aid manufacturers to produce small aids with the batteries contained in the amplifying case. This type of construction increases the battery costs to a level of £20 to £36 per annum. The smaller the aid the greater the reduction of safety factors. The New Zealand specification calls for an adaptor to be fitted to these single-pack aids, so that if the increased running costs are disclosed after use the ordinary battery pack can be coupled on to give smaller operating costs and more power if desired by the user.

Our great satisfaction is the practical elimination of the aids of some vendors whose meretricious advertisements delude the unwary, and whose disregard for service and battery supply was a source of disappointment and loss to many.—I am, etc.,

Auckland, New Zealand.

JAS. HARDIE NEIL,
President of the New Zealand League for the Hard of Hearing.

Medical Photography

SIR,—Dr. R. G. W. Ollerenshaw (May 22, p. 1001) is sceptical of the opinions expressed in my letter (May 1, p. 855). Unlike him I prefer to express my scepticism in English; it is understood by so many more colleagues. Surely photography is not the only section of art which has not made any material progress during the past 40 years, except in the direction I indicated and as the result of advances in non-visible radiations.

Dr. Ollerenshaw says, "The great bulk of the pictorial work is mediocre," with which I agree, but when he follows with the statement, "Blaming the editorial boards will not help if the material is not good in the first place," I cannot agree. I believe it would help if it ensured efficient representation on those boards, for then that which was not good or accurately described would not be published—a real advance. It is better for the journal and the contributors if quality rather than prejudice decide acceptance.

He suggests that I am being unfair by withholding the name of the hospital whose figures I quoted. Had I felt that they did not contribute point to my argument I should not have used the figures, and I preferred not to give the name lest it be considered that their use was dictated by bias, for I had put up a carefully reasoned but unsuccessful protest against an ultra-modern hospital—the Accident Hospital, Birmingham—being run without a radiologist.

I do not consider that either of the two reasons quoted by Dr. Ollerenshaw are adequate excuse for the exorbitant demands of which he approves. He states, "The photograph is free from any possibility of personal error, which may well change with the observer." I agree that the possibility of error may well change with the observer, but I hardly think that is what he wishes to imply. Does he really believe that the photograph is free from any possibility of personal error? Surely it is *the* thing which is not free from the possibilities of erroneous interpretation, for the only person who can accurately interpret the photographs of many specimens is he who prepares the specimens. Without his guidance many photographs are liable to multiple and varied interpretations. For instance, of the two photographs reproduced in the *Journal* of May 22 (p. 993) to illustrate the article on medical photography (good as they are and readily interpreted by the person who prepared them) it can be reasonably claimed that those of us who do not know the specimen consider it a puzzle to find in Fig. 2 a "cavity in which nerve was densely adherent." It certainly is not in the middle of the picture as the object which should at once attract attention.

Fortunately I have been able to secure, by the kindness of Lady Robertson, an album of medical photographs which was made up some 40 years ago for the late Sir John Robertson, and in spite of the age of the prints would submit these with confidence to any unbiased committee for judgment. Had Dr. Ollerenshaw examined publications which contain examples of these illustrations (see *British Medical Journal*, 1931, **1**, 133, and *Brit. J. Radiol.*, 1941, n.s. **14**, 79) he would not perhaps have cast the slur contained in his last paragraph. I may say that the author of a book, nearing completion in printing, on pathological conditions of food animals sought permission, even in this modern age, to use some of these and a selection of others to illustrate the book—thus lending support to the old saying. "What Manchester does to-day, Birmingham (with its motto "Forward") did 40 years ago."—I am, etc.,

Edgbaston, Birmingham. JAMES F. BRAILSFORD.

Obstetric Emergency Service

SIR,—A previous correspondence in the *Journal* (Dec. 13, 1947, p. 976, and Dec. 27, 1947, p. 1055) has revealed a widespread interest in the working of so-called "flying squads" for treating acute obstetrical emergencies in their homes. The experiences of the scheme which has been operating in London for the past ten years under the L.C.C. therefore may be worth recording. It was started in 1939 with the limited object of supplying essential treatment (especially blood transfusion) for acute obstetrical emergencies occurring in the home, which could not safely be moved to hospital. With the exception of two boroughs, which were served by a teaching hospital, the whole of London was covered by 11 L.C.C. hospitals, a clearly

defined area being allotted to each. Experience showed that roughly speaking two boroughs form a convenient catchment area for a service in which speed in reaching the patient is the main consideration. The usual information was furnished to the general practitioners of London, and in addition all midwives were instructed that, although the service was in no sense an alternative to the use of the medical aid notice, they were at liberty to telephone for the "flying squad" in acute emergencies, such as haemorrhage or collapse, where a practitioner could not be readily obtained and the need was urgent.

The service was little used at first, but calls have increased remarkably in recent years.

Year	No. of Calls	No. of Deaths
1939	7	—
1940	1	—
1941	2	—
1942	5	—
1943	23	1
1944	16	—
1945	33	1
1946	67	—
1947	101	2

The four deaths deserve comment. In the first case a wrong address was given on the telephone by a frightened messenger, and when the ambulance arrived after some delay the patient was already dead. Another death was due to acute inversion of the uterus. In each of the two remaining cases the team was first asked for, then countermanded, and not asked for again until the patient was moribund.

Analysing the 101 calls in 1947 one finds that 44 originated with doctors, 30 with midwives, 18 with nursing homes, miscellaneous 3, caller unknown 6. The great majority of the patients were suffering from post-partum haemorrhage with or without retention of the placenta. (Cases of ante-partum haemorrhage are taken directly into hospital, as it has hardly ever been thought desirable to start treatment in the home.) 73 of the 101 patients required immediate blood transfusion, and 58 were brought into hospital as needing further treatment or nursing care unobtainable in their homes. The geographical distribution of the calls is curiously irregular. St. James Hospital, Balham, has had 33 in 1947—more than three times as many as the next hospital on the list.

To provide a team available at a few minutes' notice at any hour is undoubtedly a serious burden on a maternity unit, particularly if they are as understaffed as the L.C.C. wards have been of recent years. The supply of blood has presented difficulties, but these have now been overcome. It is essential that every member of the staff, from the consultant to the gate-porter, should be made aware of "the drill" and of its importance in life-saving from the moment they take up duty, a point sometimes overlooked with frequently changing staffs. Our calm and courteous ambulance switchboard operators have played no small part in the smooth running of the scheme. Callers are often almost incoherent from anxiety. In at least two instances they got on to Scotland Yard and were disentangled with difficulty.

In a very few instances there has been an undoubted abuse of the service (as for example when the team has been summoned to give an anaesthetic or to do a trivial perineal repair), no doubt owing to a misunderstanding of its functions. Where a genuine error of judgment has led to an unnecessary call it is important to refrain from complaint. The L.C.C. has wanted practitioners or midwives to feel free to use the service where they are in any real doubt or anxiety. The fear that obstetrical procedures—which should properly be conducted in hospital—might be undertaken in the home has proved entirely without foundation. On the other hand, the service has undoubtedly saved the lives of many women for whom an immediate journey to hospital might have proved fatal.—I am, etc.,

The County Hall, London, S.E.1. LETITIA FAIRFIELD.

New Conception of Angina Pectoris

SIR,—The present theories of the production of pain in cases of angina pectoris certainly do not cover all the known facts. For this reason the paper by Dr. R. Wyburn-Mason (May 22, p. 972) was of interest in trying to correlate the various aspects of this controversial subject. I would, however, like to raise one point which he did not discuss. In support of his theory he states that nicotine causes generalized vasodilatation and is a well-known cause of anginal attacks. Surely, then, amyl nitrite might also be expected to produce similar attacks, and yet it is dramatic in its relief of these symptoms. I would be interested to know how Dr. Wyburn-Mason correlates this fact with the rest of his observations.—I am, etc.,

Edinburgh. NEIL GORDON.

Acute Intussusception in Childhood

SIR,—I have been interested in the correspondence on this subject. I have seen 25 cases with deaths. I notice that no one has called attention to the peculiar facial aspect of infants suffering from this trouble. It is very like the facial aspect of children with hydrocephalus. This sign seems to me to be almost pathognomonic of intussusception. In one case it was the only sign beyond vomiting which I saw for 24 hours; there was no pain, not even the initial cry. At the end of 24 hours I got a smear of blood on my finger-tip.

I took the mother and infant into hospital, but the surgeon, who had operated on 11 cases of intussusception, refused to operate. He did so when the mother asked him. Half an inch of ileum was intussuscepted into the colon and was already adherent. The infant made a good recovery.—I am, etc.,

Birmingham. ROBERT ANDERSON.

Juvenile General Paralysis

SIR,—In reply to Dr. Robert Thompson (May 22, p. 999), who has suggested that in the case of juvenile general paralysis which I described (May 8, p. 881) the remission was from the symptomatic fits of congenital syphilis, I would like to point out that, whereas I agree that mysterious remissions do occur, in this case it was not only the fits which cleared up. In the original illness there were other factors which strongly suggested the presence of juvenile general paralysis—for instance, the profound personality change was quite characteristic—and one must also take into consideration the motor incoordination and marked slurring of speech which was present. As far as one can ascertain this original illness completely resembled the later relapse.

As opposed to this, the patient which Dr. Thompson described was "a well-developed, intelligent boy with no stigmata of any kind." I would submit, therefore, that there was more than a reasonable probability that my patient was indeed suffering from juvenile general paralysis from an early age.—I am, etc.,

Portsmouth. W. LIDDELL MILLIGAN.

Conscription of Women Doctors

SIR,—It is common knowledge that there has been great difficulty ever since the end of the war in meeting the requirements of the armed Forces for consultants and specialists, but the Medical Women's Federation understands that the Services Committee of the Central Medical War Committee is now finding the same difficulty with regard to general duty officers.

It will be remembered that, whereas during the war women doctors were conscripted with their male colleagues, this policy was reversed in 1945, and that since then no women at all have been called up. The Medical Women's Federation, with the support of the British Medical Association, has always upheld the principle that in medicine there should be no differentiation solely on account of sex, and has contended that this applies equally to duties and to privileges and that women doctors ought not to escape a liability which presses hardly on their male colleagues. Repeated representations have been made to the Government, and last year an unsuccessful attempt was made to get the National Service Bill amended during its passage through Parliament. The arguments raised against the conscription of women doctors have always appeared unconvincing to the Federation, but a difficulty in pressing the case has hitherto been that there were more than enough male general duty officers available to meet the needs of the Services.

This situation is now entirely changed, and it is understood that the Services Committee of the Central Medical War Committee has had to consider new means of increasing the inflow

of G.D.O.s to the Services. The Medical Women's Federation wishes again to express its opinion that the newly qualified women doctors ought to take their share of the burden, and that they would provide a not inconsiderable contribution to the requirement. It is understood that a recommendation on these lines has been made by the Services Committee of the Central Medical War Committee to the Medical Priority Committee. This would involve legislation to render women doctors liable to National Service, but the principle at stake is so important and the immediate need so urgent that the Federation does not feel that this is an insuperable difficulty. It reaffirms the desire of women doctors to share fully all professional liabilities.—I am, etc.,

MARY F. LUCAS KEENE,
President, Medical Women's Federation.

Bromley, Kent.

Gastric Herpes Zoster

SIR,—The case of gastric herpes zoster described by Dr. R. V. Stone (May 8, p. 882) brings to mind a similar case which I attended five months ago. In this case, however, the haematemesis was slight.

The patient, a woman aged 58, had a fall on her left side in November, 1946, bruised her ribs, and developed arthritis of her left shoulder-joint. She was *x*-rayed early in November, 1947, as she had stiffness and limitation of movement of the left arm. Nothing was found apart from some arthritis of the left shoulder. Ribs and spine were normal. In December, 1947, she developed severe pain in the region of 9th and 10th ribs, radiating towards the epigastrium, associated with nausea and anorexia. A week later she developed a typical herpetic eruption and the following day vomited about 10 oz. of "coffee"-stained fluid.

She was seen by a surgeon, who took her into hospital for investigation as she had lost a considerable amount of weight and was complaining of a burning sensation over the epigastrium which was not relieved by alkalis, etc. She was also considerably dehydrated and looked ill. All investigations during her 21 days in hospital were negative. Barium meal revealed nothing abnormal. Fractional test meal showed complete achlorhydria. *X* rays of spine and ribs were normal, and urine was normal. The C.S.F. was not examined. A laparotomy was considered, but the patient would not consent to this and accordingly she left hospital in the middle of January, 1948. By this time the rash was fading, though the pain was still severe but intermittent. Her appetite gradually returned, the nausea disappeared, and by the end of February she was completely well apart from some post-herpetic neuralgia. I last saw her at the beginning of April, when she had gained 10 lb. in weight and was entirely free from symptoms.

An interesting point in this case was the fact that the lady's grandchild had had chicken-pox about three weeks before she developed her initial symptoms. I think the similarity between this case and that of Dr. Stone is most interesting.—I am, etc.,

P. E. FITZPATRICK.

Belfast.

Nervous Disorders and Malnutrition

SIR,—Dr. H. S. Stannus in his paper "Disorders of the Nervous System Due to Malnutrition" (Feb. 21, p. 342) remarks that "considerable and new interest has been aroused in nutritional disorders of the nervous system as a result of their high incidence among prisoners of war in the Near and Far East." While malnutrition is undoubtedly of great importance in these manifestations, I want to raise another point. On comparing the reports about the health of returned prisoners of war and of inmates of concentration camps one finds that the syndromes were encountered only amongst the P.O.W.s detained in the East. Both groups were on an inadequate diet, and people in the concentration camps were even on starvation diet. Lipscomb[1] states that "clear-cut specific vitamin deficiency syndromes were strikingly absent." Rosencher[2] writes that in Dachau "avitaminoses were rare and disappeared rapidly." It seems significant that there was a great incidence of malaria, ankylostomiasis, amoebiasis, and other intestinal infections amongst the P.O.W.s in the East. Lipscomb asserts that in Belsen there was neither malaria nor amoebiasis, nor were these diseases common amongst the P.O.W.s detained on the Continent.

The main reason for the appearance of the nervous manifestations supposed to be due to malnutrition and to vitamin deficiencies amongst the P.O.W.s detained in the East can only be that these manifestations were precipitated by the prevalent infectious diseases like malaria, amoebiasis, and hookworm infections. This is in accordance with modern views, which regard these diseases as predisposing factors for deficiency diseases. These infections are known to cause anorexia and gastro-intestinal disturbances, and this may result in a low calorie-intake and contribute to the malnutrition. Simultaneously there will also be poor absorption of the food due to the affection of the gastro-intestinal tract, especially in amoebiasis and ankylostomiasis, which cause loss of mucosal integrity. Lastly, all three diseases are known to cause hepatitis and affection of the liver, which in turn will lead to decreased utilization of the food.

However, there is another consequence of the involvement of the liver to be considered. Experimentally it has been confirmed that disease of the liver can cause brain lesions and damage to the nervous system. This is demonstrated in hepatico-lenticular degeneration, where derangement of the liver produces nervous changes and disturbances. The course of the disease is influenced by the diet. Homburger and Kozol[3] write that "in the cases where exacerbations were related to periods of inadequate diet, remissions followed periods during which the patients had been taking high caloric diets relatively low in fat."

Interference with the metabolism of the host by invading parasites must also be considered. It is well known that the malaria plasmodium consumes glucose and oxygen. It has been established that (1) suspensions of parasites consume oxygen at a high rate, much higher than does normal blood; and (2) the malaria parasites use glucose—half of the proportion which is destroyed being converted into lactic acid and the other half being incompletely oxidized.[4] Thus malaria infection might deprive the host of the glucose and oxygen which are needed for the metabolism of the brain, which derives its energy solely by the metabolism of glucose.

I have seen the nervous disorders mainly during the hot season. This may be due to malaria and amoebiasis being prevalent during these seasons, but it may also be possible that during the hot season there is an increased metabolism and this will accentuate any nutritional deficiencies.—I am, etc.,

S. J. GROSS.

Chirala, India.

REFERENCES
1 *Lancet*, 1945, **2**, 313.
2 *British Medical Journal*, 1946, **2**, 953.
3 *J. Amer. med. Ass.*, 1946, **130**, 6.
4 Christophers, S. R., *Trans. Faraday Soc.*, 1943, **39**, 333.

Scoliosis in School-children

SIR,—In 1942 my attention was drawn to scoliosis in the dorsal region caused by slight shortening of the one leg in a munition worker complaining of backache. There was neither history nor symptoms suggesting previous infantile paralysis or other disease, and she had attended and had various treatments at hospital, but it had never been noticed that the one leg was about half an inch shorter than the other. This naturally caused tilting of the pelvis and a compensatory scoliosis higher up the spine. Her symptoms cleared with the raising of the heel by half an inch, and massage and exercises.

Since then, when examining school-children, I get them to bend down and try to touch their toes with knees stiff, so that when standing behind them, one can easily run one's finger along the spines of the vertebrae and note whether there is any scoliosis present. Occasionally one finds a lumbar curve with the muscles of the convex side slightly more prominent than on the opposite side, as if the bodies of the 2nd, 3rd, and 4th lumbar vertebrae were twisted a little on their vertical axis. If these children are turned round and examined from the front, it can be seen that the opposite shoulder drops and the pelvis is tilted, with one anterior superior spine higher than the other. Measurement of the legs, when lying, shows a difference in length of from 1/4 to 3/4 in. (usually about 1/2 in.), as taken from the anterior superior spine to the internal malleolus. There is generally no difference in the circumference of the thigh or calf, though in one girl the whole side of the body seemed slightly smaller. The girls are normally healthy and complain of no discomfort.

When I first see them they range from 9 to 12 years old, and in each set of new girls in the past 4 years there have been one or two cases; so that in the school at present I know of 6 cases, which works out at 1½ to 2%. In 4 of the 6 girls the left is the shorter leg, the lumbar curve is convex to the left, and the right shoulder is dropped. With back exercises and the raising of the heel by the required amount (about 1/2 in.) much of the deformity disappears in time.

Another form of scoliosis is seen among the older girls, but this occurs higher up the spine, mostly in the lower dorsal region; it is combined with a twist of the bodies of the vertebrae which causes a projection of the posterior curve of the lower ribs on one side when they bend down to touch their toes. It is accompanied by dropping of the shoulder on the opposite side, and the syndrome invariably arises from the bad habit so many young people have of standing on one leg with the other knee bent. This gives

spurious form of shortened leg, with the compensatory curve in the dorsal instead of the lumbar region. The cure is obvious—exercises and a proper stance.

As I have not seen the condition mentioned much in the literature, and there is no reason to suppose that the girls are not average specimens, it seems worth while to record these cases in order to draw attention to a condition which can be easily overlooked and may lead to troublesome backache in later life if not corrected while the spine is young and pliable.—I am, etc.,

Manchester NESTA H. WELLS.

Penicillin and Gonorrhoea

SIR,—May I congratulate Dr. C. C. R. Downing for his excellent paper (March 27, p. 599) on the treatment of gonorrhoea by penicillin? As Dr. Downing states, the cure of gonorrhoea is indeed too efficient nowadays, and the patient often goes away with the idea that the disease is not so serious as he has been led to believe and that therefore he or she can afford to risk reinfection.

Secondly, there is no doubt that penicillin does mask the appearance of primary syphilis. Recently in the Middle East I began treating all cases of gonorrhoea with sulphonamides, as two of my cases later developed typical primary chancres. No spirochaetes, however, were demonstrated and the Wassermann reaction has continued to remain negative. Several weeks later I had two other similar cases, but here again no spirochaetes were demonstrated and both cases have been serologically negative. These must therefore be considered to be cases of chancroid.

Thirdly, as Dr. Downing points out, it is extremely difficult to persuade patients to return for blood tests many months after they consider themselves cured. Luckily in the Royal Navy this problem does not arise, as cases are kept under surveillance during this period no matter where they go.—I am, etc.,

H.M.S. Challenger. F. S. PRESTON, Surg.-Lieut. R.N.V.R.

Refractory Iron-deficiency Anaemia

SIR,—With reference to the article entitled "Refractory Iron-deficiency Anaemia Treated with Intravenous Saccharated Oxide of Iron," by Prof. L. S. P. Davidson and Dr. R. H. Girdwood (April 17, p. 733), your annotation on refractory iron-deficiency anaemia (p. 739), and the letter on iron in anaemia, by Drs. H. G. B. Slack and John F. Wilkinson (p. 753)—my method of the treatment of anaemia with intravenous injections of iron arsanilate might be of interest. The preparation and administration of this insoluble salt are described in a paper entitled "Interim notes on the therapeutics of bismuth, antimony, zinc, iron and copper arsanilate, in the treatment of malignant disease, syphilis, yaws, leprosy, tuberculosis, whooping-cough, and some minor complaints in the African," published in the *East African Medical Journal* (August, 1946).

A considerable number of cases have now been treated as out-patients with good results; and in only one, out of several hundreds of injections in which the several arsanilates have been used during the last six years, has there been a slight rigor. The maximum quantity of iron arsanilate used intravenously in any one case during recent months was 15 grains, in 1½ grain doses suspended in 2 ml. of water and given on alternate days.—I am, etc.,

Fort Johnston, Nyasaland. J. O. SHIRCORE.

Chronic Recurrent Iridocyclitis

SIR,—The following is an account of a case of chronic recurrent iridocyclitis, treated with an "anti-allergic" drug, both locally and by mouth.

The patient, a woman aged 62, had presented from time to time over a period of 15 years with a severe iridocyclitis. The first time she was seen was in 1931, when she came to hospital complaining of a painful red right eye. On examination the right eye was intensely red with ciliary congestion, and K.P. were present. This was accompanied by lacrimation and photophobia. She was treated with hot steamings and atropine ointment. After some months there was a little improvement, but she had several relapses between this time and 1934. Meanwhile the left eye became involved also.

She was taken into hospital and treated on several occasions during the next ten years or so, during which time she was treated with atropine, heat, short-wave therapy, etc. Each time after being discharged from hospital she would have a relapse.

In February of this year she presented with both eyes intensely red and painful. There was a great deal of ciliary congestion, and K.P. were present in large numbers; both corneae showed staining areas.

We commenced treatment with guttae "antistin privine" t.d.s., together with ung. atropinae 1% to both eyes; tab. antistin 100 mg. b.d. by mouth were also given. In three days both eyes were white and the patient free from pain. To quote the patient's own words, "I've never known my eyes to be so free from pain before." This treatment was continued for two weeks and discontinued about a month ago. Since this time both eyes have remained quiet.

The above is not claimed as a cure for all forms of iridocyclitis, but merely put forward as a suggestion that an "anti-allergic" drug, such as the one used, when applied locally and given by mouth, offers a form of therapy, with sometimes dramatic results, in a number of cases of "idiopathic" disease of the uveal tract which fail to respond to the more orthodox and acknowledged forms of treatment.—I am, etc.,

London, W.9. LAURENCE CARTLEDGE.

Pregnancies after Caesarean Operation

SIR,—The following case illustrates the importance of advising every pregnant woman who has undergone a caesarean operation for one reason or another to enter hospital for all subsequent confinements, where surgical help is readily available should any further abnormality present itself.

Owing to a contracted pelvis this particular woman, aged 24, was delivered by caesarean section 18 months previously. She was again admitted for a similar purpose, and after labour had begun was brought into the theatre. Nothing unusual had taken place and labour was proceeding normally, but previous catheterization of an apparently full bladder yielded no result, the suprapubic swelling remaining until she was under full general anaesthetic, when it appeared to vanish.

The abdomen was opened, and it became immediately obvious the uterus had ruptured along the line and length of the old incision. The protruding and distended membranes had been mistaken for a full bladder. The operation was carried out in the usual manner, the child and placenta being delivered through the ready-made opening. Intraperitoneal haemorrhage was negligible. Mother and child were none the worse for this experience, and although recovery was uneventful a serious occurrence of this nature happening in less fortunate circumstances might well have ended in disaster.

A colleague, Dr. Carson, who performed the operation tells me that of the 200 or more cases he can personally call to mind in which this surgical procedure was adopted for overcoming obstetric difficulties, it is the first time he has met with this particular complication, and in view of its unusual manifestation its recording in the *Journal* may serve a useful purpose.—I am, etc.,

Blakeney, Glos. J. M. ASHTON.

Risks of Dicoumarol Therapy

SIR,—It was a relief to read your annotation on the risks of dicoumarol therapy (May 22, p. 988). In spite of all that has been written as regards the advantages of dicoumarol the dangers persist even if not always obvious.

The policy of giving 200 mg. daily for more than two or three days is wrong and dangerous. 300 mg. daily for two days only, or 300 mg. on the first day followed by 200 mg. on the second day, is usually safe. After the first two days no more dicoumarol should be given for 10 to 14 days, and then very small doses (25 mg. or 50 mg.) should be tried. If the response is favourable 100 mg. may be given every other day for a period to be determined by the result of the daily estimation of prothrombin time. Prothrombin time should be estimated, as I have indicated (*British Medical Journal*, Nov. 8, 1947, p. 748), before the course of dicoumarol is started and every day after the first two days.

In the beginning the reaction to dicoumarol takes place slowly, perhaps 48 hours, but after the 10–14 days' intermission a *small* dose of dicoumarol (25 mg. to 50 mg.) may result in a profound alteration of prothrombin time, accelerated (24 hours) as compared with 48 hours for the initial doses; and the prothrombin time returns more rapidly to normal (24 or 48 hours

compared with 10–14 days). This small "re-educating" dose may be followed by 100 mg. every other day until the prothrombin time has lengthened to the desired extent. In spite of the objections of Dr. H. Lempert (Jan. 17, p. 125) and Dr. R. G. Macfarlane (*J. clin. Path.*, 1948, **1**, 113), it is maintained that viper venom (the "stypven" of Messrs. Burroughs, Wellcome and Co., Ltd.), if calibrated before use, is a perfectly safe and reliable guide to the prothrombin time after dicoumarol treatment provided the technique is above reproach.—I am, etc.,

Epping, Essex. FRANK MARSH.

Our Democracy

SIR,—I congratulate you upon your decision to give Dr. A. C. E. Breach (June 12, p. 1157) adequate space in which to deal with the anomalies that many of us feel exist at present in the effort of the R.B. to voice the views of the profession. Dr. Breach's analysis is thoughtful and factual and his suggested remedies call for close attention. But all this will take time, and time is just what we have not got if, as many of us think, we should bring order into the present confusion and stem the drift into *laissez-faire*.

What is the actual position to-day? We had two alternatives before us (and this whether we consider the progress of medicine, the best service for the public, or our own freedoms): either to get the present Act so amended that these things would be safe for a considerable period, or to give the Minister a blank cheque and be in perpetual doubt as to whether we could honour it—in other words, watch every Regulation with critical eyes for an indefinite time. In February we had no doubt that the first alternative was the proper one, and we said so. In April the hurried plebiscite, with its implication that the position had materially changed, and the *volte face* of the Council, which the Chairman was powerless to oppose, broke the all too tenuous thread which held us united; and in May, through the R.B., we chose the second alternative.

How, now, are we to clarify the position and regain our self-respect and the respect of the public? There is a large section of the profession which feels that these things should not be left in the hands of the men who, though they "have discharged their exacting and arduous duties" in a patient and conscientious way (Breach), yet have "taken the wrong turning." Confidence has been badly shaken. There are many doctors asking for guidance, not only for themselves but for their sons and daughters thinking of medicine as a vocation. To these are to be added many members of the public. There will shortly be a third group—men who will leave the Service they have too hastily joined out of fear and not conviction.

What is the best way of dealing with the situation? Will you allow me, Sir, to say through the medium of the *Journal* that I shall welcome the views of any of your readers sent to me privately? Such a step seems to me desirable before any action is taken in which I am concerned.—I am, etc.,

London, W.1. HORDER.

Rota of Pharmacies

SIR,—Dr. L. S. Woolf (May 22, p. 1006) draws attention yet again to a pressing problem. During my membership of the Hours of Service Subcommittee of the Middlesex Insurance Committee (shortly to be superseded) I drew upon myself considerable unpopularity and the open antagonism of the pharmaceutical members of the Committee, who were determined to perpetuate what was in effect a wartime practice of early closing. I pointed out that the pharmaceutical service was as integral a part of medical benefits as the doctors' service, and that, although something was paid to the doctors for emergency supply of drugs after hours, this was based on the old assumption that chemists would remain open during normal evening hours—say, till 8 p.m. in most cases.

The pharmacists' case was that they were bound by the Shop Hours Act as regards the sale of cosmetics, fancy goods, etc., and that it would not pay them to remain open solely for the purpose of dispensing. It was finally agreed that the rota system, which had been more honoured in the breach than the observance, should be properly implemented. A little improvement has taken place, but it is to be hoped that the new regulations will insist on an adequate pharmaceutical service in the evening. A woman should be able to obtain a sulphonamide after 6 p.m. even if she cannot get a lipstick.—I am, etc.,

London, W.2. M. MUNDY.

Remuneration in Rural Areas

SIR,—It fell to my lot to be the representative of the Rural Practices of Great Britain on the Association's Representative Committee which discussed the "shape of things to come" with the Minister of Health (then Mr. Ernest Brown) while the White Paper for the National Health Act was in preparation. I was also one of the two witnesses called to give evidence on behalf of rural practitioners before the Spens Committee. Not unnaturally, therefore, after reading the official leaflets describing the scheme, I am moved to make some comments on matters which seem to be of vital importance to country doctors.

Take first of all the main condition for granting the (unfortunately so christened) "basic salary"—the minimum number of patients. At this, in the words of one of Mr. George Robey's songs, "I'm not only surprised, I'm amazed!" For no distinction is made between the town doctor with all his patients within easy walking distance (over pavements) and the country doctor in a sparsely populated, extensive, and difficult district, with each patient an average of five miles away from him (and part of that five miles "o'er moor and fen, o'er crag and torrent wide"). As things stand, each alike, it seems, qualifies for "basic salary" on the same minimum of 500 patients. Surely, as a matter of plain common sense and equity the truly rural doctor should qualify on less than is stipulated for the town doctor.

It should be made quite clear also in what way the "inducement grants" to those who practise in difficult areas will be distributed and how much they will amount to. Without adequate inducement it will certainly be found that many experienced and fit country doctors in their fifties will turn from doctoring to farming—a very lucrative occupation just now.

The question of adequate mileage grants to rural doctors is another matter that needs very special consideration, because our car expenses are greatly increased by quite abnormal conditions, which are not likely to be remedied for a very long time. My own case is perhaps typical of many other colleagues'. I have to use two cars against the town doctor's one car. The roads I travel along are in a very poor state—and little wonder, for during the war this was a battle area, and heavy tanks, many hundreds of them over a long period, pounded over roads and lanes which were meant for horse traffic. Now repairs to these roads have been further hindered by the "axing" in the county of a large number of road-men and the drastic curtailment of road maintenance and improvement schemes. The cars which I have to drive along these roads are respectively of 1937 and 1938 vintage because I cannot get a new car under present conditions of supply. Whereas it was my pre-war routine to change one car for a new car every year, the agents now tell me that if they can supply a new car in two or three years' time I shall be lucky. In the meantime repair bills mount up to alarming figures on each car annually—a factor which is not contemplated at all under any existing scheme of N.H.I. mileage grants. Neither is adequate allowance made for the time factor in country work, not only the time spent in motoring and walking to distant farms (I may walk often six or seven miles in a day), but also the time spent in driving ten or twelve miles to the nearest town for car repairs beyond village resources; for shopping, or to get to a cinema or concert. (One is entitled to one's recreations in the country as well as in the town.)

Then there is the rent of the branch surgeries and "houses of call" which are so essential in country areas; *and* there is the dispensing, for willy-nilly dispense we must if most of our patients are not to be saddled with great inconvenience or even real hardship. For instance, at one of the villages from which I mainly carry on my practice the nearest chemists are respectively eight, ten, and twelve miles distant, and the only form of public transport is a bus once a week to two of the towns. If I did not dispense at my branch surgery a messenger would have to be employed to get any medicines that were urgently needed; and the tariff is 10s. per journey by motor-cycle, £1 by a hired car.

Obviously doctors *must* dispense under conditions such as these, and the dispensing allowance should cover the cost of employing a dispenser as well as the cost of the drugs. Indeed, was not that the suggestion, or even the promise, made by Mr. Bevan in a Parliamentary reply soon after he took office? Unfortunately I have not the time nor the opportunity to delve into *Hansard* on this point, but I seem to have a very clear recollection that such a statement by him was duly reported in the *B.M.J.'s* "Notes in Parliament."

Lastly, there is the matter of telephone and postage expenses. These are very heavy in country practice at the present high rates. I have, for instance, to rent two telephone installations and an extension. One of my neighbours maintains three. Each call to the nearest hospital costs 6d., and two or three such calls may have to be made to secure the admission of a panel patient. All the many local calls are on the same scale—and will multiply after July 5. The 2½d. postage stamp makes a big difference, too, in the costs of

sending necessary letters and tablets to patients, and there is the quite appreciable item of medicines sent by train and by bus. It is true that most patients would willingly reimburse these items, but it is quite impracticable to keep a note of the multitude of them—small payments individually, but very appreciable annually in their sum.

Such are some of the considerations that, I submit, should be borne in mind in assessing the remuneration of the rural doctor. Many of them were emphasized in my evidence to the Spens Committee. I hope that they may materialize as something more tangible than the elusive "rare and refreshing fruit" of Mr. Lloyd George's promises in 1911—or the receding mirage of health centres. Will the rural doctor get a "new deal" under this new Act? Or, in the words of my one-time sergeant-major (a ruthless castigator of super-optimists), is it just going to be "some bloody 'opes!"?—I am, etc.,

Clynderwen, Pem. E. ROLAND WILLIAMS.

*** Mr. Bevan said in the Committee stage of the N.H.S. Bill (*Hansard*, June 25, 1946): "arrangements will be made in rural areas for doctors to provide medicines." The Secretary of the B.M.A. writes: The Association has not yet discussed with the Ministry of Health the doctors' remuneration for dispensing under the National Health Service. It is awaiting a proposal from the Ministry, and the Ministry is not in a position to make one until it has dealt with the chemists' remuneration. The Association is, however, alive to the position in which rural practitioners will find themselves, inasmuch as the persons for whom they will be required to dispense will be fewer in number, though they will still have to employ a dispenser. The Ministry has been informed and recognizes that this is one of the points which will have to be taken into consideration.—ED., *B.M.J.*

Partnership Agreements

SIR,—A great deal of correspondence dealing with the multitude of aspects of the N.H.S. as it affects the individual practitioner or section of the profession has appeared in the columns of the *B.M.J.* No direct exchange of views has been made concerning existing partnership agreements when the N.H.S. comes into operation on July 5. We are informed through the medical and national press that the question is under consideration by a legal tribunal.

The tribunal was formed over a month ago, and no results have been forthcoming. This most important factor, affecting a large number of medical practitioners, appears to have been neglected. Announcements containing such phrases as "*All* doctors will be free to choose their own partners" leaves one in doubt as to whether this applies to existing as well as future partnership agreements. Surely some decision could be reached and announced on the existing ambiguity. The advent of the N.H.S. quickly approaches, and surely we are entitled to know our position as partners before the great upheaval on July 5.—I am, etc.,

Manchester. M. J. O'DONNELL.

Health Centres

SIR,—In your leading article entitled "What We Have Gained" (May 15, p. 936) I noticed that you wrote when referring to the building of health centres, "building materials and labour will be more usefully employed in providing new houses." In many parts of Great Britain this may be true: in the industrial areas I feel that the building of health centres is most urgent. Practically all the doctors' houses have quite small surgery accommodation. The waiting-rooms were designed for private practice and during the winter months have been only just able to cater for the increased numbers attending for N.H.I. certificates. It is certain that with free medical attention there will be a considerable increase in the number of women and children attending. During the winter months there will be a gross deficiency in accommodation. It is apparent to anyone working on the spot that in the winter there will be queues outside almost every doctor's house; women and children will be unable to gain admission; they will either have to wait outside in the rain or snow, or return home and hope to gain admission at a later date. Mr. Bevan has produced the regulation for the Service without any provisions. He has set up the machinery, but appears to have no intention of providing a roof.

I submit, Sir, that the provision of health centres, whether temporary or permanent, must be given urgent consideration. This Government is pledged to help the working classes. Unless it provides accommodation the patients in these areas will suffer hardships in the not far distant future. During the war whole air-fields were rapidly erected. Surely enough materials could be obtained in times of peace. Each health centre would cater for the needs of several thousand people. It has been stated that there is a shortage of trained staff. For attendance on "sick parades" and simple dressings any woman who has had experience as a nursing orderly in H.M. Forces or as a V.A.D. in hospital would be suitable.

I feel that the Minister of Health could encourage the local authorities to proceed in thickly populated areas. He is reluctant because it will mean an increase in expenditure. Both doctors and patients are expected to manage under grossly inadequate conditions. I hope the leaders of the B.M.A. will investigate and press for action.

As I write the rain is pouring down outside.—I am, etc.,

Bolton, Lancs. W. MARSHALL BENNETT.

Wise Action

SIR,—I feel it is time that some of your correspondents stopped moaning and started to get down to make this new Health Service a success. Most of what they write is prejudiced rubbish, to say the least, and I am sure this new scheme can be a success both for patient and doctor, though no doubt changes will be necessary from time to time. I feel that the B.M.A. Council and the Representative Body have acted wisely and, as it may be seen in the years to come, farsightedly.—I am, etc.,

Worsborough Dale, Yorks. D. W. MAYMAN.

44-hour Week

SIR,—It is high time that somebody thanked those who have tried to maintain the principles on which the British Medical Association is based (see "Points from Letters," May 22, p. 1006, "Self-government"), and I take this opportunity of doing so.

The number of our casualties up to the eve of the Special Representative Meeting and reported by Dr. Dain on May 28 were encouragingly small in view of the intensity of Mr. Bevan's attack, and I have no doubt that the figures available by May 26 stimulated Sir William Douglas to write to Dr. Hill on that date (*Supplement*, June 5, p. 155). Such a written statement is always useful, and, besides, we now know that satisfactory hours of work for doctors will, like central clinics, go by the board. However, this can be avoided if the following motion, postponed on May 28 owing to lack of a quorum at 6.30 p.m., is passed by the Annual Representative Meeting at the end of June:

No. 145. Motion by Liverpool.—That the Minister of Health should be told exactly what the doctors can do on the following lines: (*a*) doctors will work a 44-hour week or as advocated by the T.U.C. for their supporters and will take the holidays with pay customary for Civil Servants of equal status; (*b*) the State must provide the receptionists and filing-clerks necessary to enable doctors to devote themselves to clinical work; (*c*) existing semi-private and private beds will be reserved for the use of patients who prefer to see their doctors privately outside State hours. When the Government provides more free beds the percentage of pay-beds can be kept up if the public voluntarily contributes the necessary capital.

Clause (*a*) now has special significance in view of the following sentence taken from Sir William's letter: "The charging of a private fee to a patient on a doctor's public list for anything within the field of general medical practice would, in the Minister's view, be repugnant to the whole new health scheme." The Representative Body's acceptance of the B.M.A. Council's Recommendation A to co-operate conditionally amounts to handing the Minister a blank cheque. It is likely to cause more friction than did the way in which a majority wish was waived in favour of a minority, as in the case of the April plebiscite result of a 64% vote against accepting service. It will be inconsistent if the representatives who on May 28 set

a precedent for an eight-hour working day—for more than half of them left the meeting before the end—do not on June 29 preach what they practised and vote for Clause (*a*) of Motion 145, thus giving doctors a chance to think again and providing the Council with the powder and shot they now appear to lack.—I am, etc.,

Liverpool. H. RICHARD BICKERTON.

The Independence Fund

SIR,—History has again resembled itself, and brilliant leading articles cannot conceal the fact that under B.M.A. leadership medicine and the profession have been betrayed. This time, unfortunately, the results are likely to be very much more considerable than in 1911. An impregnable position has been reduced by sowing doubts and dissension within, and a large number of colleagues have already voted away the constitutional right of British citizens of access to the courts of the country. Perhaps it is hardly surprising that such men are now no more mindful of the more altruistic principles which until recently found so much space in your pages.

We are now left with a "soldiers' battle." One of the first questions which immediately arises in the minds of those of us who backed our support with such money as we could afford is what is now to be the future of the "independence fund" to which we were asked to subscribe. Of the two declared objects of the fund one was to organize the unification of the profession in its expressed determination not to accept service, the other to provide financial aid to practitioners who may suffer hardship as a result of their loyalty to the cause of the profession. As a prompt subscriber I wish to know at once what interpretation is likely to be placed by the trustees on the loyalty of those members of the profession who are unable to share the view expressed by Dr. Dain that the present debacle is in reality a great victory, and who are still not prepared to sign away either the great and abiding professional principles for which we have stood or the few personal rights remaining to us, such as access to the courts, by accepting the terms of service.—I am, etc.,

Carlisle. C. GORDON HARPER.

Defeat or Victory

SIR,—In April the Council instituted a plebiscite in order to find out whether the attitude of the profession towards the N.H.S Act was such as to warrant an all-out fight against the Minister. The accepted terms were that only if 13,000 general practitioners voted against it would the profession be called to fight. Unfortunately 13,000 general practitioners did not vote against it—much to the disappointment of a large section of the profession, including some members of Council. The fight, therefore, was off. The Council, recognizing that there was nothing else to do, drafted Recommendation A, and submitted it to the profession, to the majority of which it meant nothing else than what it was—a symbol of defeat. Yet on May 28 we find this same symbol of defeat carried bravely aloft on the rostrum of the great hall, as a flag of victory—of a victory, the greatest that has been won against this or any other Government: surely a strangely accommodating recommendation, but only as strange as the sight of the members of Council urging us all to surrender unconditionally.—I am, etc.,

Nantwich, Cheshire. OLIVER H. BLACKLAY.

Medical Trade Union

SIR,—Dr. R. E. Clarke (May 29, p. 1048) has in my opinion hit the nail right on the head when he advocated the formation of a medical trade union. In my presidential address to the Northern Ireland Branch of the B.M.A. in 1935 I said that only the formation of such a union, which would ostracize professionally and socially any and every doctor who refused to join, could save our profession from disaster, and unfortunately in the absence of such a union disaster has overtaken us.

Dr. Clarke advises that the B.M.A. should "transform itself into a properly constituted trade union," but I understand that under its articles of association this is impossible. Should an alteration of these articles which would permit this to be effected be impracticable, could not the B.M.A. foster the formation of such a union to work in close liaison with itself?

I also advocated the fixing of a substantial annual subscription—£10 10s. at least—and the accumulation of a substantial fighting fund. Had this been done even ten years ago we would now have a fund of some millions and would be in a position to fight any Government to a successful finish. Unless such a union is formed the profession of medicine in Great Britain and Northern Ireland will deteriorate to such an extent that no one can be a member of it and retain his independence and self-respect, nor can the standards and traditions which constitute a precious heritage be maintained.—I am, etc.,

Belfast. W. LYLE.

SIR,—Kindly permit me to express my strong support for Dr. R. E. Clarke's proposal (May 29, p. 1048) that the B.M.A. constitute itself a legal trade union affiliated to the T.U.C.

On July 5 the great majority of doctors will find themselves to be subcontractors to His Majesty's Government under conditions which no trade unionist would tolerate for one week.

As members of a properly constituted trade union our minimum demands should be: (1) A 44-hour week. (2) Payment at time-and-a-half rate for overtime up to 12 hours a day and double time for any longer hours worked. (3) Holidays with pay. (4) Locum provided free in sickness or when on holiday. (5) Transport provided. (6) Compensation for accident or illness sustained while at work. (7) Special payment of "danger money" for work in pathology, bacteriology, and infectious diseases. (8) Provision of staff to do work of secretary, telephonist, and receptionist. (9) Provision of surgery with furniture and all medical instruments, or payment or rent for those now supplied by doctor.

I submit that these demands at no point go beyond well-established trade union principles and practices, and that until the B.M.A. is a trade union the practice of medicine will continue to be the last example of sweated labour in Britain.—I am, etc.,

Isle of Barra NORMAN J. L. MACKINVEN.

POINTS FROM LETTERS

Soil Fungi

Dr. DUDLEY F. TORRENS (Market Rasen, Lincs) writes: The study of soil fungi arose out of the successful work of the late Sir A. Howard in practical agriculture, and the work of Dr. M. C. Rayner. It has found corroboration in field work by agriculturists, in practical health studies by Sir R. McCarrison, and in social surveys great and small in all parts of the world. These have all approached the problem as one of agriculture, as it ought to be, but it has been decried as "cranky," "uneconomic" costly in labour and money, etc., and so far has failed to get the backing it deserves. The question arises whether the examination of these fungi might not yield in the laboratory a product which used as a food accessory might make available to humanity the undoubted great increase in resistance to disease and increased bodily and mental vigour which we are denied through faulty agriculture.

Treatment of Pruritus Ani

Dr. H. MARGULIES (London, N.W.2) writes: I have read with great interest Dr. Alexander Orley's letter (May 8, p. 904) on pruritus ani and feel that both his explanation of its cause and the suggested therapy merit some comment. . . . The "functional pruritus ani" for which no cause can normally be found (and these mainly are under discussion) normally starts with an accidental irritation, followed by scratching, infection, etc.—the recognized vicious circle which usually foils all endeavour to cure it.

The rational therapeutic approach, therefore, will require to combat the two main links in the chain of mentioned factors, and these are (*a*) irritation, and (*b*) infection. In the last six months I have used an ointment containing 0.3% of phenylmercuric nitrate in combination with "amethocaine" and benzocaine ("polycrest cream"). Of the 12 cases under my care 10 were cured within 4 months, and some of these patients had a history extending over 3–4 years. . . .

Terms of Service

Dr. F. C. McN. MCILWRICK (Callander, Perthshire) writes: . . . Having been advised (or ill advised) to take part in the Health Service and probably having somewhat unwillingly taken the advice, is it not time that the terms of service were discussed openly? We have had quite enough of hush hush, now now, come come! Having lost our right to earn a considerable part of our living, is it not time to discuss and insist that the terms of service will be sufficient to recompense us in full? . . .

Obituary

DANIEL DOUGAL, M.D., F.R.C.O.G.

Daniel Dougal, professor of obstetrics and gynaecology in the University of Manchester since 1927, died on June 4 at the age of 63 after a long and distressing illness.

The only son of Dr. James Dougal, he was born at Strathaven, Lanarkshire, on Dec. 4, 1884, and started his education at the Glasgow High School. When his father acquired a practice in Blackburn he entered the Manchester Grammar School and went on to Manchester University, where he graduated M.B., Ch.B. in 1906. He became demonstrator in anatomy, in which subject he was awarded a scholarship, and then went to the Manchester Royal Infirmary as a house-surgeon. There followed a year as house-surgeon at the Manchester Northern Hospital for Women and Children before Dr. Dougal began his long connexion with St. Mary's Hospital, where from 1909 to 1913 he held in succession every resident post. It was in 1913 that he was awarded a gold medal for his M.D. thesis on a new form of pelvigraph.

F. W. Schmidt]

Dr. Dougal was elected honorary gynaecological surgeon to the Manchester Northern Hospital in 1914. On being appointed pathologist to St. Mary's Hospital he set about reorganizing the laboratory, and for the first time secured the appointment of a full-time laboratory technician, Frank Dale, who afterwards was his right-hand man in the laboratory and in his university department. Nobody realized more clearly than Dougal the necessity for a sound knowledge of pathology as a basis for teaching in gynaecology and obstetrics. In 1919 he joined the honorary staff of St. Mary's Hospital and later that of the Manchester Royal Infirmary.

As professor of obstetrics and gynaecology in the Manchester University from 1927, he lent great distinction to the chair. He did not spare himself in placing the teaching of obstetrics and gynaecology in Manchester on a sure foundation. He introduced into his lectures the latest methods of visual education, using first lantern slides, then a micro-projector, and later cinematograph films. Full notes of each lecture were given to his students, and these should eventually have been published as a textbook. Beautiful sketches and diagrams for the illustrations of this proposed volume lie in the university department now. Dougal always envisaged continued development of his department and he made the museum there one of the finest of its kind in this country. His contributions to the literature of his subject were numerous and valuable. He was a director of the *Journal of Obstetrics and Gynaecology of the British Empire* and chairman of the Editorial Committee in succession to Sir Comyns Berkeley.

Prof. Dougal was a member and former president of the Manchester Pathological Society; a Fellow, and at one time president, of the North of England Obstetric and Gynaecological Society; an Honorary Fellow of the Edinburgh Obstetric Society; and an Honorary Fellow of the American Association of Obstetricians, Gynaecologists, and Abdominal Surgeons. He delivered his Presidential Address to the Manchester Medical Society on April 2, 1947, his subject being "From the foetal point of view." Dougal was then a very sick man and his efforts thereafter were curtailed. Among his colleagues it is well known that only ill health prevented him from allowing himself to be nominated for the presidency of the Royal College of Obstetricians and Gynaecologists, an honour he richly deserved. He was a Foundation Fellow of the College and a member of its first Council.

Always a keen soldier, he served in the old Volunteers, and obtained a commission in the T.A. in 1911 in the O.T.C. He joined the R.A.M.C. in 1914 and went to France with the 52nd Field Ambulance, 17th Division, gaining his majority. In 1917 he became D.A.D.M.S., 34th Division, an appointment he held until the end of that war. He was awarded the Military Cross and the Croix de Guerre with Palms, and was twice mentioned in dispatches. In 1939 he threw up his extensive practice, and with the rank of colonel was appointed Officer Commanding the Fifth Western General Hospital at Davyhulme, Manchester. This large unit he organized and staffed, but in 1940 he had regretfully to leave the Army and return to his university chair.

A word should be said about his personality. He had strongly marked features and light blue eyes, which regarded the person with whom he was in conversation unflinchingly. In speech he was terse and always to the point. His sense of humour was considerable and he enlivened any company. He was a staunch friend and it may be truly said was without enemies, this in spite of his strong and forceful character.

Dougal delighted in entertaining his many friends and was a perfect host, drawing everyone into conversation. He frequently extended his hospitality to foreign gynaecologists who were visitors to his department. He travelled extensively with the Gynaecological Visiting Society and never missed a meeting while his health lasted. Two main hobbies filled his leisure. He was an expert on old pewter, and was said to have the finest collection in this country; he was president of the Society of Pewter Collectors. Fishing was his other great interest, chiefly in Derbyshire and Scotland, and he was a member of the Fly-fisher's Club of London. Finally, no account would be complete without mention of his love for his native land. He was president of the St. Andrew's Society of Manchester from 1934, and at every annual dinner he was seen at his genial best, wearing the kilt, and always making a first-class speech in proposing the health of the chief guest.

Daniel Dougal was a very great figure with a massive knowledge of his own specialty. His friends knew him as a kind, generous, and upright man, and his patients will ever remember him with gratitude, affection, and admiration. Several generations of students held him in the same esteem and affection. He faced his end with characteristic fortitude, and the memory of such a vital personality will ever remain with his friends.

He married in 1916 Lilian Newton, daughter of John Tweddell, of Newcastle-upon-Tyne, who survives him. They were a devoted couple, and she supported him generously in his social activities.—T. M. B. and J. W. B.

Dr. EDWARD JOSEPH BLACKETT died at his home in London on May 13 at the age of 77. He was a very senior practitioner who had a high reputation in the Bryanston Square district for many years. The son of the late Joseph Byron Blackett, M.R.C.S., he was born in London and educated at Stonyhurst College and afterwards at St. George's Hospital Medical School. He qualified M.R.C.S., L.R.C.P. in 1895 and was appointed house-surgeon and house-physician to St. George's Hospital. For many years he was surgeon to A Division of the Metropolitan Police, and he was also Medical Superintendent of the Hospital of St. John and St. Elizabeth when that was not a resident appointment. During the 1914–18 war he worked assiduously at some of the private hospitals for officers which several Mayfair hostesses established in their mansions, notably at one in Belgrave Square and at the Hon. Mrs. Rupert Beckett's in Grosvenor Street. For these services Dr. Blackett was awarded the O.B.E. after the end of the war. He had, too, the medals for attending the coronations of King Edward VII and King George V. He had also been honorary secretary to the Society for the Relief of Widows and Orphans of Medical Men. On the occasion of the Diamond Jubilee of Queen Victoria a woman in the dense crowd in Hyde Park was seized with precipitate labour. It was impracticable to carry her through the crowd to St. George's Hospital, not much more than 100 yards away: so Blackett was called upon to conduct the labour on the plinth at the foot of the Achilles statue.—H. R.

Dr. AILEEN MARION SETON POLLOCK died suddenly at Ludhiana on March 29, as was briefly reported in our issue of May 1 (p. 861).

Dr. C. C. Chesterman writes: Dr. Pollock was appointed to Ludhiana in 1928, and served under the principalship of its founder, Dame Edith Brown, who had established this first medical school for women in India in 1894. At first she was engaged in teaching anatomy and as assistant surgeon. In 1935, when

on leave, she obtained the F.R.C.S.Ed., and in 1941 was appointed superintendent of the Medical School Hospital. The next year she was called to succeed Dame Edith as principal, and quickly her great ability and energy were evident in the raising of standards and the maintenance of the highest traditions of Christian medicine. During the recent communal disturbances Dr. Pollock was put to a very great strain, working incessantly, taking but a few hours of rest by day or night. It was due to her initiative in establishing a cholera hospital that this disease was controlled among the tens of thousands of refugees who were being cared for in the inadequate transit camps. On Easter Sunday night she was last seen visiting a seriously ill patient at 1.30 a.m. She was found dead in her bed next morning from the condition of which she had premonitions, though she refused to modify the course of her life and the burdens she so readily accepted. Thus her death was but the crown of a living sacrifice. As a local official put it, "I often felt ashamed that a woman could do so much." Two days of mourning were observed in the city, and from the theatre sweeper to the wealthiest patient in the district there will be sorrow as long as her memory lives. In Dr. Pollock a very strong personality which had surmounted many difficulties was combined with a unique degree of selfless giving of herself in the service of others. India and the profession will be immeasurably poorer for her loss.

Dr. LEONARD EDGAR WHITAKER, who died on May 12 at the age of 72, was the seventh son and youngest child of Joseph Whitaker, founder of *Whitaker's Almanack*. He was educated at Lancing College and St. Bartholomew's Hospital, qualifying in 1899. He was ophthalmic house-surgeon to Dr. Vernon, whose other junior was Walter Jessop. He was an enthusiastic sportsman, and during his time at the hospital was captain of the association football team and of the combined hospitals team. On leaving Bart's Dr. Whitaker travelled to New Zealand with a fellow student, returning to England on the outbreak of the South African war. He served throughout as a civil surgeon and was awarded the medal and five clasps. Again coming back to England he started in practice at Diss, Norfolk, but in 1910, attracted by his earlier visit to the country, he went with his wife and two small children to New Zealand, settling in Palmerston North. He became ophthalmic surgeon to Palmerston North Hospital, and later its treasurer. He was instrumental in raising funds to extend it and make it at that time the most efficient and up-to-date hospital in New Zealand. Dr. Whitaker also became medical officer of health for the district, although troubled by increasing deafness, and in the great influenza epidemic after the 1914–18 war he gave devoted service. The lessons he learned at this time had much to do with the further improvement and expansion of the local hospital service. In 1920 he left for England and joined the family publishing business of J. Whitaker and Sons, Ltd., becoming a director and later managing director of the firm. He was keenly interested in literature and in the book trade. Although his main interests in later life were literary, he was croquet champion on several occasions, both in England and New Zealand. After croquet his principal diversion was motor-cruising on the Thames. He leaves a widow and two sons.

Dr. DOUGLAS EDWARD WILSON died suddenly from a heart attack at his home in Bishop Auckland, Co. Durham, on May 20, at the age of 45. Dr. Wilson graduated in the University of Aberdeen in 1925, and served in the Colonial Medical Service in Tanganyika Territory from 1928 until 1942. During the last five years of that period he was working as a pathologist. Owing to temporary ill-health Dr. Wilson returned to England, where he held laboratory appointments until 1943, when he joined the R.A.M.C., serving in France and the Middle East. He was finally assistant director of pathology to "Paiforce" with the rank of lieutenant-colonel. On his release from the Army Douglas Wilson rejoined the Colonial Service as senior pathologist, Palestine, and on his retirement from this post he was offered and accepted the appointment of area pathologist in County Durham. Dr. Wilson was an enthusiastic and indefatigable worker, and published several contributions to medical literature. All who knew him will feel that they have lost a charming, sincere, and sympathetic friend, and the high esteem in which he was held, not only by his professional colleagues but also by everyone who came in contact with him, will comfort his widow and two sons, to whom the deepest sympathy is extended.—H. J. L.

Dr. LAURENCE WILLIAM POLE, who died at Edinburgh on May 21, was a student at Edinburgh University. He graduated M.B., Ch.B. in 1901, and took the D.P.H. in 1906. For a time he was engaged in general practice in Edinburgh and then in Canada. Returning home, he took up public health work and was assistant M.O.H. for the City of Worcester, and later county medical officer for Radnorshire. His career was interrupted by the first world war, when he served in France with the R.A.M.C. In 1920 he was appointed medical officer of health for Llanelly Borough and continued in this capacity until 1944. His medical colleagues expressed their appreciation of his work over a period of twenty-four years at a farewell meeting just before he went into retirement. Dr. Pole possessed the traditional characteristics of his race—to the casual acquaintance he might appear distant and reserved, but to anyone privileged to know him his friendship was something of genuine value. He did much for public health but frequently regretted that he could not do more. He was a great lover of children, and never did he appear happier than when he was among them at the annual summer camp on Pendine sands, which had been established by him in 1923. He is survived by his widow and one son, Dr. Alan Chateris Pole.—D. M.

Dr. ALLAN LEONARD SMITH TUKE died suddenly at the age of 82 at his home in Dunfermline on May 25. Dr. Tuke, who was Dunfermline's oldest practitioner, was the youngest son of the late Sir John Batty Tuke. A native of Edinburgh, he graduated M.B., C.M. in 1887, and continued his studies at Leipzig and Vienna. He was Prof. Sheen's house-surgeon at the Edinburgh Royal Infirmary before settling in Dunfermline as assistant to the late Dr. Arthur Drysdale, subsequently becoming his partner. Dr. Tuke was for many years the senior member of the honorary medical staff of the Dunfermline and West Fife Hospital. He was associated with this institution from its inception and was largely responsible for the extensions to the hospital which were completed in 1931. In 1888 Dr. Tuke enlisted as a trooper in the Fife Light Horse, a unit of the Old Volunteers, which later became part of the Fife and Forfar Yeomanry. In 1914 he was mobilized with his regiment, serving with the rank of major in the Egyptian and Palestine campaigns and being awarded the M.C. in 1916. After the war Dr. Tuke was one of the founders of the Dunfermline branch of the British Legion and acted as its chairman for a number of years. In April, 1931, he was made a Free Burgess of Dunfermline in recognition of his public services. Dr. Tuke had attended a meeting of the managers of the Dunfermline and West Fife Hospital on the day before his death and had been seeing patients at his home the same afternoon. He was able to recall a time when operations were conducted on the kitchen table by the light of a tallow candle and with the assistance of a handywoman. In 1938 Dr. Tuke was appointed a Deputy-Lieutenant of the County of Fife. He had been a member of the British Medical Association for many years and was president of the Fife branch in 1922. He was one of the original members of the Carnegie Dunfermline Trust and inspired and originated one of its most important enterprises, the setting up of the Dunfermline College of Hygiene and Physical Education.

Dr. CHARLES DAINTY HATRICK, who was for thirty-six years in practice at New Barnet, Middlesex, died on May 31 at the age of 72. Dr. Hatrick had only returned the week previously from South Africa, where he went last year to visit his twin daughters. A student at University College Hospital in the closing years of the last century, he graduated in 1901 and proceeded M.D. two years later. The teaching staff at U.C.H. included such brilliant men as Gowers, Barlow, Sidney Martin, Victor Horsley, and Godlee, and it was here that Dr. Hatrick began a life-long friendship with Wilfred Trotter. Immediately after qualifying, he went out to the South African war as a civil surgeon. Returning home, he did some house appointments, and then settled in New Barnet, where he remained until his retirement in 1940. Hatrick was a man of outstanding ability, of courage, and of decision. He was a quick worker, a quick thinker, and possessed of abundant energy. Although not of robust physique he carried on an extensive practice without apparent effort. He was a member of the B.M.A. of long standing and took a great interest in the Association's work. He was the first chairman of the newly created Barnet Division, president of the Hertfordshire Branch, and an original member of the Hertfordshire Local Medical and Panel Committee, of which he was chairman for four years. In 1935 he went out to South Africa as a representative of the B.M.A. to the South African Medical Association Congress. In all these offices he gave of his best and never spared himself. In the first world war he served with the R.A.M.C. in India, and in the last war he played his part as a member of a National Service Military Recruiting Board. His leisure was spent in the garden. He was an expert gardener, and he grew flowers of great beauty that were a source of delight to his friends. He was singularly fortunate in his married life. To his widow and to his three children, a son in the medical profession and twin daughters, one also a doctor, married and living in South Africa, the sympathy of all his friends will be extended.—W. G. H.

Medico-Legal

FAILURE OF ANOTHER RESTRICTIVE COVENANT

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

Last year the peace of mind of medico-legal draftsmen was disturbed by the decision of the Court of Appeal in the "Okehampton case." In this case of *Routh* v. *Jones*[1] the Court of Appeal declared invalid a restrictive covenant in an agreement between a principal and an assistant, with the effect that the ex-assistant was left free to compete in practice with his former employer. The covenant had been drawn in a form quite commonly used. Now the Court has upset another restriction which, although the agreement itself was not a very usual one, was by no means unusual. As in last year's case, the decision doubtless renders useless several covenants on which practitioners are now relying for protection if their present relationship with partners or assistants should end.

Dr. Robert Donaldson Jenkins had a general practice in the Gloucestershire countryside just north of Bristol. The bulk of the work was the treatment of common ailments and injuries; there was the ordinary proportion of midwifery cases and of minor surgery but no specialist work. In 1935 he married a lady who had just qualified; she helped occasionally with the practice but took no regular active part. Early in August, 1939, Dr. Jenkins entered into partnership with Dr. Alexander C. Reid. As the doctor's wife, Mrs. Rosalind Mary Seymour Jenkins, was well known to the patients of the practice as a doctor on her own account, Dr. Reid desired to guard against the possibility that after Dr. Jenkins retired or died, or if she set up in practice on her own in the district, patients might consult her, for she was in a specially favourable position to acquire a knowledge of the practice. The partnership deed therefore contained a clause providing that during the continuance of the partnership, or if Dr. Jenkins died or withdrew from the practice, Mrs. Jenkins should not at any time thereafter practise as a physician or surgeon or apothecary within a radius of five miles, or professionally visit or consult with any of the patients of the practice. During the continuance of the partnership, however, she could see patients of the practice by consent of either partner and account to the partnership for the fees.

At the end of August Dr. Jenkins was called up for service in the Navy, and by arrangement with the partners Mrs. Jenkins worked for the partnership all through the war as an assistant. This engagement ended at the end of May, 1947. Dr. Jenkins had died in September, 1946. Mrs. Jenkins then put up a plate with her name and qualifications, and Dr. Reid, who had built another surgery and wished to take in another partner, objected that she was breaking her restrictive covenant. She moved the Court for a declaration that the covenant was invalid, saying that it covered districts well outside the practice and also many kinds of special practice and even the duties of a works medical officer.

Judgment

The judge, Mr. Justice Romer, in the Chancery Division of the High Court, heard evidence from a secretary of the British Medical Association on the precise meaning of the terms "consultant," "specialist," and others used in the evidence. He disregarded the old authorities on the ground that the approach of the courts to covenants of this nature is now materially different from what it had been when they were decided. He bore in mind, while not considering it the decisive factor, that the area of restraint included a built-up area on the outskirts of Bristol from which the partnership did not normally draw patients. He was much impressed by the fact that the restriction was not limited in time. There was no evidence to show why this should have been necessary, and he did not infer that it was in the least necessary to preserve the goodwill. He bore this in mind also when deciding on the question generally. Moreover, the covenant would prevent Mrs. Jenkins from acting as a consultant or specialist in medicine or surgery, although no such work had ever been done by the partnership. The question of whether the restriction on practice could be severed from that on visiting or consulting with patients of the practice did not arise, because the second restriction was as bad as the first. Consultation was not part of the work of the practice, and the whole sentence was hopelessly vague. He thought that "patients of the practice"—a phrase of very uncertain meaning—meant persons who might at any time during Mrs. Jenkins's lifetime after the termination of the partnership be treated as patients of the practice. Even if counsel's suggestion was right, that the phrase covered only regular patients, Mrs. Jenkins could never know whether a given person was or was not a patient of the partnership. If she set up in practice in London and somebody came from the prohibited area on a visit, she would clearly be guilty of breaking the agreement if she treated him. Restrictive covenants are construed against the persons who invoke them, and he did not feel inclined to guess at some narrow meaning which would save the clause from defeat. He therefore declared that the whole restriction was void and unenforceable as contrary to public policy, too vague, and in unreasonable restraint of trade.[2]

Like all other decisions in cases of this nature this decision turned largely on the facts, and must not be interpreted as being of universal application.

[1] *British Medical Journal*, 1947, 1, 700; 1947 1 All E.R. 758.
[2] *Thornbury Gazette*, March 20, 1948.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

On May 29 the degree of M.D. was conferred on K. S. MacLean and P. F. Barwood.

UNIVERSITY OF GLASGOW

George McCreath Wyburn, M.B., Ch.B., F.R.F.P.S.Glas., Senior Lecturer in the Anatomy Department of the University, has been appointed Regius Professor of Anatomy in succession to Prof. William James Hamilton, D.Sc., M.D., F.R.S.Ed., who has retired.

UNIVERSITY OF LONDON

Philip H. Mitchiner, C.B., C.B.E., M.D., M.S., F.R.C.S., has been reappointed a member of Convocation (Medicine) on Senate of the University for the period 1948–52.

John William Stewart Blacklock, M.D., F.R.F.P.S., professor of pathology in the University of Glasgow since 1937 and director of the Institute of Pathology at the Royal Infirmary, Glasgow, has been appointed to the University Chair of Pathology tenable at St. Bartholomew's Hospital Medical College, from Oct. 1.

James Whillis, M.D., M.S., F.R.C.S., has been appointed to the Chair of Anatomy tenable at Guy's Hospital Medical School, from Oct. 1.

The title of Reader in Morbid Anatomy in the University has been conferred on Daniel Merlin Pryce, M.D., in respect of the post held by him at St. Mary's Hospital Medical School.

UNIVERSITY OF WALES

The following candidates for the degrees of M.B., B.Ch. at the Welsh National School of Medicine have satisfied the examiners at the examination indicated:

SURGERY.—Sarah A. Chard, G. J. Davies, Joan V. Davis, Janet Dean-Jones, T. Griffiths, E. J. Hargadon, Beryl H. Jones, Rosina E. Jones, D. M. D. King, G. M. Reynolds, Esmé S. Rogers (with distinction), Mary C. Sumption, G. Thomas, J. D. Thomas, J. A. Wilkinson.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

Dr. J. W. Trevan, F.R.C.P., F.R.S., will deliver the Bertram Louis Abrahams Lecture on "Curare and Curarimimetic Drugs" at the College (Pall Mall East, S.W.) on Tuesday, July 13, at 5 p.m.

The Mitchell Lecture, to be given by Dr. Robert Coope, F.R.C.P., has been postponed till Thursday, Nov. 18.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

On June 7 Prof. J. A. Ryle delivered a lecture at the Royal College of Physicians of Ireland on "The Modern Concept of Social Medicine." The President, Dr. Bethel Solomons, presided, and a vote of thanks to the lecturer was proposed by Dr. A. Parsons and seconded by Prof. T. G. Moorhead.

The following have been admitted as Fellows of the College: R. S. W. Baker, M. D. Hickey, F. E. Pilkington, C. B. Robinson.

The following have been admitted as Members of the College: J. G. Callanan, S. Davis, L. Godfrey, K.-ul W. Hazratji, P. J. G. Quinn, M. Brown, D. C. Connolly, J. O. Doyle, M. F. Healy, T. Lynch, J. McNutt, J. P. Malone, R. Sahu, R. H. O'Hanlon.

ROYAL COLLEGE OF SURGEONS IN IRELAND

The following officers have been elected for 1948–9: *President*, Prof. H. S. Meade; *Vice-President*, Prof. William Pearson; *Other members of Council have been elected as follows:* J. F. L. Keegan, R. A. Stoney, H. Stokes, E. L. Sheridan, J. F. Devane, A. A. McConnell, T. O. Graham, W. Doolin, W. C. P. Smyly, F. Gill, A. B. Clery, I. Fraser, A. S. Ffrench-O'Carroll, T. G. Wilson, M. P. Burke, R. R. Woods, J. H. Coolican, T. A. Bouchier-Hayes, and N. A. Kinnear.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At the meeting of the Council of the College, held on May 22 with the President, Mr. W. Gilliatt, in the chair, it was announced that Dr. Emil Novak, Baltimore, U.S.A., had accepted an invitation to become an Honorary Fellow of the College. Dr. Novak was appointed lecturer for 1948 under a lectureship founded to cement more closely the bonds of friendship between the British Empire and the United States of America. Prof. N. W. Philpott (Montreal) was appointed William Blair Bell Memorial Lecturer for 1948.

The following were elected to Council to fill vacancies caused by retirement, statutory and otherwise: As representatives of the Fellows: Prof. O'Donel Thornley D. Browne (Dublin), Mr. Malcolm Donaldson (London), Mr. H. L. Hardy Greer (Belfast), Prof. Hilda Nora Lloyd (Birmingham), Mr. Harold Jordan Malkin (Nottingham), Dr. Douglas Miller (Edinburgh), Prof. H. J. Drew Smythe (Bristol). As representatives of the Members: Mr. Donald Blake Fraser (London), Dr. Robert James Wotherspoon (Glasgow).

The following were admitted to the Fellowship of the College: J. O. Baker, S. C. Bose, F. J. Burke, H. H. Caple, W. Clement, G. J. StC. Fisher, I. Goldberg, C. J. K. Hamilton, J. S. Henry, O. S. Heyns, J. Howkins, J. G. H. Ince, Hilda M. Lazarus, D. M. Lindsay, R. Lodge, D. M. Low, J. R. McArthur, K. F. Mackenzie, P. A. McLeon, R. B. Meiklejohn, Jocelyn A. M. Moore, A. B. Nash, I. Y. Patrick, Susanne J. Paterson, H. N. Ray, Helen E. Rodway, W. N. Searle, G. A. Simpson, J. R. Vant, G. M. White, W. R. Winterton.

The following were admitted to the Membership of the College: S. C. Anderson, E. C. Bryant, Margaret E. M. Boulton, J. M. Bowen, J. C. McC. Browne, J. T. Burrowes, R. W. Burslem, A. W. Chester, J. Crawford, L. A. Cruttenden, P. C. Denham, J. C. H. Dunlop, S. Evans, J. B. Fleming, J. F. Foulkes, D. C. Galloway, S. F. Hans, Betty Hargreaves, J. R. Hassard, Rosa Hertz, J. B. Hurll, P. S. Jaikaran, Eileen I. Jamieson, E. W. Jones, M. M. Kriseman, Sylvia Lerer, Una G. Lister, Florence P. Logan, J. T. Louw, S. D. Loxton, A. M. Michael, N. V. Mody, Cecilia M. Murray, G. S. Musgrove, M. J. D. Noble, K. Pasricha, R. G. Patel, A. E. Perera, P. T. Por, R. W. K. Purser, T. F. Redman, O. A. Schmidt, F. Shaw, B. H. Sheares, D. M. Sheppard, W. R. Sloan, B. S. Surti, D. A. Thomson, J. G. Thurston, May D. Westerman.

Feeding customs, like any other, vary with the way society is organized. The three square meals proverbially advocated by our forefathers as necessary for a good day's work are unsuited to people working in offices or factories, who prefer more and smaller meals. Many believe that their minds do not work so keenly when their stomachs are full, and present difficulties in preparing substantial meals confirm their choice. A Research Group appointed by the London Council of Social Service Standing Committee on Communal Feeding and the London and Middlesex Standing Conference of Voluntary Youth Organizations has recently investigated[1] the meals taken by juvenile workers in the London area. The Group interviewed first 36 boys and 18 girls, most of whom were aged between 15 and 18, and then a further 112 boys and 84 girls. It found that six meals a day were almost universally accepted, and a seventh was often taken by those who frequented clubs.

Breakfast on weekdays is light and sometimes hurried, though over half have something cooked. Nearly all take sandwiches or cake to eat at work at 10 a.m., and some also drink tea or cocoa. They have a mid-day lunch at a canteen or restaurant or at home, and most then have a snack in the middle of the afternoon. All have tea on returning home, which may be a cooked meal if the lunch was small, and most of them have supper between 9 and 10.30. The likes and dislikes of these young people for different kinds of food vary considerably. Fish is the least popular animal food; indeed, many eat little or none. But the Group comments that "fish and chips" may have been regarded in the inquiry as an item distinct from mere fish. Turnips and parsnips are unpopular, and 10 of the group of 56 dislike one or all green vegetables except beans. The Group concludes that boredom conduces to hunger, which is readily satisfied by snacks, and since many make a poor breakfast employers might provide light refreshments at the start of the day to encourage work. The short breaks for rest are better times than the mid-day meal for introducing any supplementary foods, such as milk, that may be necessary. On the whole, however, the meals of 90% or more of these juveniles are satisfactory.

[1] *Young Workers at Meal Time*, National Council of Social Service, 1948.

Medical Notes in Parliament

NATIONAL HEALTH SERVICE

There were presented to Parliament on June 2 Draft Regulations entitled: the National Health Service (Superannuation) (Amendment) Regulations, 1948; National Health Service (Superannuation) (England and Scotland) Regulations, 1948; National Health Service (Transfer of Officers and Compensation) Regulations, 1948; and the National Health Service (Executive Councils) Amendment Regulations, 1948. On June 3 there was presented the National Insurance (Medical Certification) Regulations, 1948.

On June 9 there were presented to Parliament the National Health Service (Scotland) Superannuation (Amendment) Regulations, 1948, and the National Health Service (Transfer of Officers and Compensation) (Scotland) Regulations, 1948.

Interim Contracts for Specialists

Sir ERNEST GRAHAM-LITTLE on June 8 invited Mr. Bevan to publish the interim terms of remuneration for specialists. He said these had been made known to Regional Boards, but not to those who were to be asked to serve under the Health Act as specialists.

Mr. BEVAN replied that whole-time specialists who, by virtue of Section 68 of the National Health Service Act, 1946, were transferred on July 5 to the employment of a Regional Hospital Board or a Board of Governors of a teaching hospital would continue, for the time being, to receive the same remuneration as they did before the appointed day. Part-time specialists who, in general, were not so transferable and whose appointments would therefore lapse on July 5, would be offered temporary contracts remunerated at the flat rate of £200 per annum for each half-day per week up to a maximum of £1,600. These terms of remuneration were broadly based on current practice where part-time visiting staff were paid for their hospital appointments. They were designed simply as interim payments on account until the recommendations of the Spens Committee had been discussed with the profession and a new scheme of remuneration worked out. As soon as that was done adjustments would be made so as to apply the new scheme as from July 5 (even if the discussions were prolonged beyond that date) and to do so in such a way as to bring the specialist's remuneration up to a level appropriate to his seniority and experience.

Sale of Goodwill

On June 10 Sir ERNEST GRAHAM-LITTLE asked Mr. Bevan whether, in view of the fact that general practitioners could carry on private practice in conjunction with public practice under the National Health Service Act, 1946, he would introduce amending legislation to enable them to dispose of the goodwill of their private patients.

Mr. BEVAN replied that he could not do this, but he pointed out that full compensation was provided to cover both elements in these combined practices.

Medical Certificates

Mr. STEELE stated on June 7 that under the National Health Service certificates signed by any qualified medical practitioner would be accepted in support of a claim for sickness benefit. It was not essential that the certificates should be on the standard official form, but convenient that they should be. Medical practitioners practising outside the National Health Service could obtain these forms by applying to the Executive Councils set up under the Act.

RADIOACTIVE SUBSTANCES BILL

The Radioactive Substances Bill, which had already passed the House of Lords, was considered in Committee by the House of Commons on June 4. On Clause 3 Major VERNON moved to omit the provision authorizing the sale by registered pharmacists and sellers of poisons of substances containing more than a prescribed quantity of radioactive element. He said the special skill and elaborate precautions needed to avoid the dangers in handling these substances were outside the range of education of the ordinary pharmacist and outside the range of many medical practitioners. It had never been the practice to sell radium and radon in small quantities all over the country. They had been prepared in establishments equipped for the purpose and taken direct to the hospitals where they were used. Even so there had been accidents and losses.

Mr. LINSTEAD said that beside the substances mentioned by Major Vernon there was a group of preparations in which very minute quantities of radioactive substances were intro-

duced. Radioactive mud and waters were used in medicine. He hoped the Minister would bring under control substances with very small quantities of radioactive material which at present were sold without control and could easily be used to exploit credulous people. The coming of the National Health Service probably meant that there might be preparations, in addition to those now known, which could properly be prescribed by the general practitioner for use by a patient under his direction and which would not require elaborate machinery.

Capt. FIELD said that if the nomination of properly qualified people were left to the Advisory Committee it should not be rigidly confined to medical practitioners, dental practitioners, registered pharmacists, or authorized sellers of poisons. One or two hospitals in London had on their staffs physicists who were not necessarily medical practitioners, yet would be ideal persons to handle and prescribe these substances in certain cases.

Mr. BEVAN said this point should be raised on another part of the Bill. The subsection to which Major Vernon's amendment was directed dealt with persons who sold or otherwise supplied these substances and not with persons who used them. All kinds of radioactive substances, such as ointments and hair restorers, might contain dangerous percentages of radioactive matter and it was essential that they should not be allowed to be sold freely.

Major Vernon's amendment was negatived. He then moved the deletion of the "escape Clause" providing a period of three months from the appointed day during which any qualified practitioner who had applied for a licence could act as though that licence had been granted.

Mr. SOMERVILLE HASTINGS hoped the Committee would not agree to the removal of this Clause. Only a few doctors specialized in this line of treatment and they did not undertake it lightly. There must a Clause of this sort so that treatment already begun could continue in the interval between application for licence and the granting of it.

Mr. BEVAN said he did not know how long would be required to grant the licences, or how many applications there would be. The Government could not say that from the appointed day all work must stop. The amendment was withdrawn and Clauses 3, 4, and 5 were added to the Bill.

Advisory Committee

On Clause 6 Commander NOBLE contended that the Iron and Steel Institute and the Institute of Metals, acting jointly, should have representation on the Advisory Committee.

Mr. HASTINGS asked whether the Ministry of Health could suggest to the College of Physicians that among its nominations to the Committee one, at least, should be a dermatologist.

Mr. LINSTEAD felt that the Pharmaceutical Society should be consulted. It had a representative on the Advisory Committee under the Therapeutic Substances Act.

Mr. BEVAN was sure that what had been said would be noted by the bodies nominated to the Advisory Committee. The claims of dermatologists ought to be considered when recommendations were made by the Royal College of Physicians. He would investigate to what extent consultations with the pharmacists was essential. He could not see at the moment how they would be directly interested. Clause 6 was ordered to stand part of the Bill, as were Clauses 7 and 8.

On Clause 9 Mr. RICHARD LAW said that, when a person felt himself injured by the Regulations and the Minister ordered an inquiry, the inquiry should be public, save for security reasons.

Mr. BEVAN said it would be cumbrous to hold a public inquiry in each case. If objection were taken in the House the Minister would be bound to put the report of his inspector before the House. Clauses 9 to 15 were ordered to stand part of the Bill and the Committee stage ended. The Bill then passed through the report stage without further discussion and was read a third time.

VETERINARY SURGEONS BILL

Mr. TOM WILLIAMS on June 4 moved the Second Reading of the Veterinary Surgeons Bill. This Bill has passed the House of Lords. He said the task of ridding the country's herds of bovine tuberculosis was limited by the supply of veterinary surgeons. Both Cambridge and Bristol Universities were planning courses in veterinary science. Under the Bill the Privy Council could say that an appropriate degree of the university would carry with it a registrable qualification as veterinary surgeon. The Bill did not limit the number of universities which would ultimately be brought in. The Bill proposed to register unqualified practitioners who fulfilled its conditions, to place them under the disciplinary control of the Royal College, and to allow them to describe themselves as "veterinary practitioners." The title "veterinary surgeon" was reserved for the fully qualified person.

Mrs. MANNING said that this country had only 94 veterinary surgeons per million cattle, against 148 veterinary surgeons per million cattle in Denmark and 247 in Switzerland. The suggestion that the intake of veterinary surgeons should only be increased to 220 a year was pitiful.

Mr. KENYON said that sterility in dairy cattle affected one-fifth of the herds. The remainder, after taking three years to come into production, produced only three lactations. If the veterinary profession found a remedy it would greatly contribute to the welfare of the country.

Mr. GEORGE BROWN, replying for the Government, said the figure of 220 qualified entrants annually into the profession had been based on the estimate of the number for whom decent posts could be found, here or in the Colonial Service. The number of unqualified persons admitted to the supplementary register was unlikely to be more than 500, as against 4,000 qualified people on the other register. "Veterinary practitioners" would be allowed to make tuberculin tests, to issue certificates, and to act for insurance companies.

The Bill was read a second time.

Purchase Tax on Drugs

The Schedules of the Finance (No. 2) Bill were considered in Committee by the House of Commons on June 8. On Part II of the Schedule Mr. N. MACPHERSON challenged the distinction made in levying purchase tax, between drugs mentioned in the *Pharmacopoeia* or *National Formulary* and advertised drugs. He said the Government had more or less admitted that this distinction was made in order to enable the Treasury to get money more easily. Sir STAFFORD CRIPPS promised to look into the matter before the Report stage and see whether a form of words could be found to distinguish between undesirable and desirable drugs. The Schedules were approved and the Committee Stage concluded.

Employment of Blind Persons.—Mr. GEORGE ISAACS announced on June 1 that the Ministry of Labour had set up a working party "to investigate the facilities existing for the employment of blind persons in industry and in public and other services, and to make recommendations for their development."

Treatment of Enuresis.—Mr. BRAMWELL on June 1 asked about the treatment of a soldier who suffered from enuresis and was compelled to sleep in the guard-room. Mr. MICHAEL STEWART said this soldier slept in the guard-room on medical recommendation as part of his treatment. The arrangements made were calculated to add considerably to his comfort.

Artificial Limbs.—Mr. BEVAN is satisfied that the artificial limb manufacturers now working for the Ministry of Pensions can supply and maintain without undue delay all the artificial limbs required under the National Health Service without the aid of other established firms.

"Medresco" Hearing-aids.—Persons who will be eligible on account of the disability of partial deafness to qualify for the "medresco" hearing-aid are estimated by experienced otologists to number about 150,000. This estimate is based on a survey by the Medical Research Council.

Approved Societies.—All Approved Societies will be wound up from July 5, 1948. Regulations governing the procedure will be issued shortly.

Analgesia in Domiciliary Midwifery.—Asked what progress had been made in providing analgesic apparatus in hospitals and for use by midwives Mr. BEVAN replied that the apparatus was normal equipment in hospitals, and 2,820 sets had been supplied for domiciliary midwives who used them for 43,683 cases in 1947 as against 20,507 in 1946. Reports remained favourable. Whether a hospital patient should be given analgesia must continue, he said, to be decided by the doctor in charge.

The Services

Brigadier A. A. Eagger, C.B.E., T.D., and Colonel F. Whalley, C.B.E., D.S.O., T.D., K.H.P., R.A.M.C., T.A., have been appointed Honorary Colonels to the 16th (Airborne) Division, R.A.M.C., and the 49th (W.R. and M.) Armoured Division, R.A.M.C., respectively.

The Efficiency Decoration has been conferred upon the following officers of the Territorial Army: Colonels H. J. A. Longmore, W. McK. H. McCullagh, D.S.O., M.C., Major (Temporary Lieutenant-Colonel) J. B. Bishop, Majors (Honorary Lieutenant-Colonels) D. J. Campbell and J. D. Finlayson, M.B.E., and Major J. E. McCartney, R.A.M.C.

No. 22

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended May 29.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1948 (a)	(b)	(c)	(d)	(e)	1947 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	40	2	13	2	2	73	3	46	6	4
Deaths		1	1				—	1		
Diphtheria	151	24	35	14	7	194	14	55	15	9
Deaths	2	—	—	1	—	1	—	1	—	—
Dysentery	122	14	43	3	1	46	4	19	—	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	2	—	1	2	—	3	—	—	—	—
Deaths		—					—			
Erysipelas			28	11	2			25	10	3
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				26					33	
Deaths	45	3	13	2	—	64	3	23	10	2
Measles*	13,468	1134	210	139	73	12,314	545	177	110	34
Deaths†			1	—	1	10	2	—	1	—
Ophthalmia neonatorum	56	4	12	—	1	56	6	12	—	—
Deaths										
Paratyphoid fever	5	2	2 (B)	1 (B)	—	7	—	1 (A)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	579	37	3	7	—	512	30	3	5	10
Deaths (from influenza)‡	3	—	1	—	—	7	1	—	1	—
Pneumonia, primary			184	41				171	20	
Deaths	163	26		11	8		24		6	6
Polio-encephalitis, acute	1	—				3	—			
Deaths							—			
Poliomyelitis, acute	20	2	2	5	—	18	2	4	4	—
Deaths§	1	1					—			
Puerperal fever		1	7		—		2	18		—
Deaths										
Puerperal pyrexia‖	92	13	13	3	—	116	7	14	2	1
Deaths		—					1			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,216	98	276	47	23	886	75	147	22	42
Deaths†			—	—	—	1	—	—	—	—
Smallpox	—	—	—	—	—	14	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	9	—	—	6	—	1	—	6	2	1
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	3,085	265	56	117	19	1,657	240	154	38	20
Deaths	13	—	—	—	—	13	4	1	4	1
Deaths (0–1 year)	315	37	47	29	6	395	47	74	26	15
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	4,145	658	568	202	104	4,476	696	582	175	111
Annual death rate (per 1,000 persons living)			11·5	12·6				12·1	11·0	
Live births	8,281	1383	972	449	254	8,561	1329	1131	522	320
Annual rate per 1,000 persons living			19·6	28·1				22·8	32·9	
Stillbirths	224	33	38			273	32	29		
Rate per 1,000 total births (including stillborn)			38					25		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

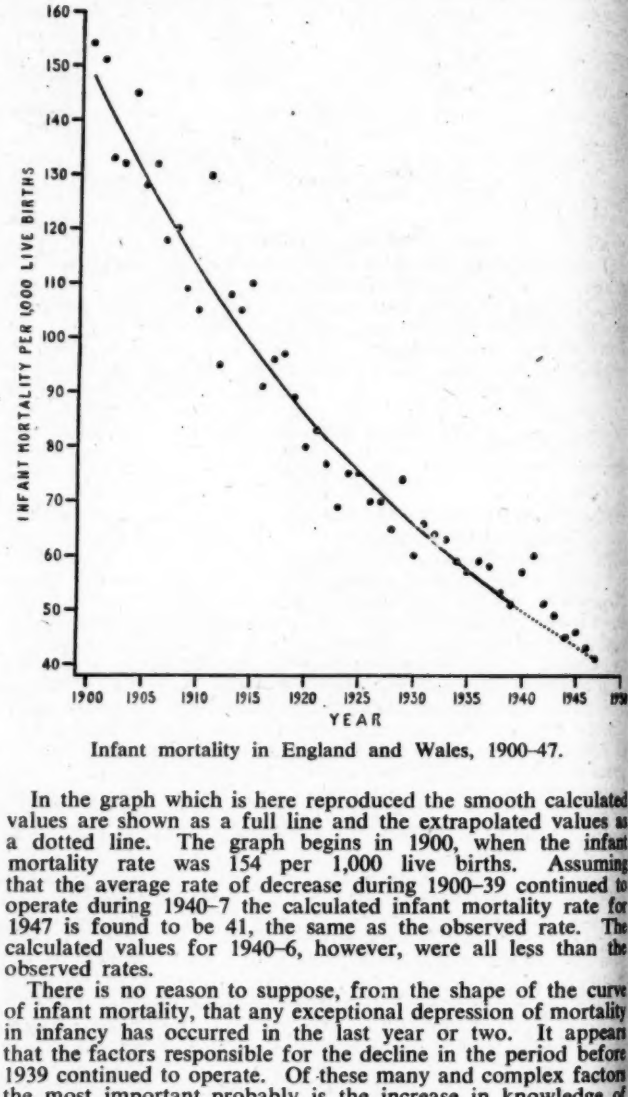
§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

‖ Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Infant Mortality

The infant mortality rate, which has been steadily declining since the beginning of this century, reached the record low level of 41 per 1,000 live births in 1947. This low value has received considerable publicity and has been attributed to the current standards of nutrition of mother and infant. It may be of general interest therefore to review briefly the trend of infant mortality from the beginning of this century. What the exact course of infant mortality would have been if there had been no war is a matter for speculation, but the break in the downward trend in 1940 can probably be justly attributed to the outbreak of hostilities. The rate increased then from 51 in 1939 to 57 in 1940 and to 60 in 1941; after 1941 the decline in the infant mortality rate was resumed. To obtain an estimation of the possible trend a curve was fitted to the values from 1900 to 1939 and the extrapolated values found for 1940–7.



Infant mortality in England and Wales, 1900–47.

In the graph which is here reproduced the smooth calculated values are shown as a full line and the extrapolated values as a dotted line. The graph begins in 1900, when the infant mortality rate was 154 per 1,000 live births. Assuming that the average rate of decrease during 1900–39 continued to operate during 1940–7 the calculated infant mortality rate for 1947 is found to be 41, the same as the observed rate. The calculated values for 1940–6, however, were all less than the observed rates.

There is no reason to suppose, from the shape of the curve of infant mortality, that any exceptional depression of mortality in infancy has occurred in the last year or two. It appears that the factors responsible for the decline in the period before 1939 continued to operate. Of these many and complex factors the most important probably is the increase in knowledge of infant welfare and management. The diffusion of knowledge throughout a community is a gradual process and some time elapses before any new idea is universally practised, so that it may be several years before the full effects of this improved knowledge are shown in the infant mortality rate.

Discussion of Table

In *England and Wales* there was an increased incidence of measles 1,791 and whooping-cough 405, and a decrease in the notifications of scarlet fever 138 and of diphtheria 17.

Very little change occurred in the trend of measles in most areas, and the large increase in notifications was contributed by only a few counties; the largest rises were Lancashire 286, Warwickshire 239, Durham 234, Essex 213, Cheshire 147, London 140, and Nottinghamshire 98.

A small rise in the notifications of whooping-cough was general throughout the country; the only increase of any size was 51 in Middlesex. There was no change of note in the local incidence of diphtheria; the largest returns were Lancashire 39, London 24, Durham 14, and Warwickshire 11. The notifications in these four counties formed almost 60% of the total for the country. The largest decreases in the incidence of scarlet fever were Yorkshire West Riding 44 and Durham 30.

The chief features of the returns for dysentery were an increase in Yorkshire West Riding from 22 to 41 (Bradford C.B. 15, Huddersfield C.B. 10) and a decrease in London from 32 to 14. The only other large return for dysentery was Lancashire 32 (Lancaster M.B. 14). The total notifications of acute poliomyelitis remained unchanged; multiple cases were notified from Bristol C.B. 4, Birmingham C.B. 2, and Leicester C.B. 2.

In *Scotland* a decreased incidence was recorded for measles 41, acute primary pneumonia 17, and diphtheria 10, while an increase was reported for scarlet fever 20 and whooping-cough 12. The decline in the incidence of diphtheria was due to the fall in the western area. A small increase in the notifications of scarlet fever was recorded in most areas. The only large return for dysentery was 24 in the city of Glasgow.

In *Eire* the notifications of measles decreased by 10, while increases occurred in the notifications of whooping-cough 16 and scarlet fever 10. In Dublin C.B. there was an increase of 11 in the notifications of measles and of 12 for whooping-cough.

In *Northern Ireland* the largest fluctuation in the trends of infectious diseases was an increase of 6 for diphtheria.

Week ending June 5

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,547, whooping-cough 3,207, diphtheria 166, measles 10,824, acute pneumonia 479, cerebrospinal fever 42, acute poliomyelitis 21, dysentery 95, paratyphoid 2, and typhoid 1.

Medical News

Consultants and the Spens Report

At a meeting of consultants and specialists held on June 14 at the Royal College of Physicians there were 59 present, including representatives of the three Royal Colleges, the Scottish Medical Corporations, all the specialties, and the Provincial Teaching Hospitals Association. The following resolutions were passed unanimously: (1) This meeting approves in principle the Spens Report, recommends its adoption, and hopes the Government will implement it. (2) This Committee should continue in existence in order to consider matters which concern consultants and specialists.

Sir Alexander Fleming Honoured in Spain

The Spanish Government has awarded Sir Alexander Fleming the Grand Cross of Alfonso X, and Madrid University has conferred on him a doctor's degree *honoris causa*. While visiting Barcelona he opened the new Institute of Bacteriological Investigation, and he was elected an honorary member of the Royal Academy of Medicine of Seville.

Battle of Health Service

Field Marshal Viscount Montgomery referred to the attacks and counter-attacks in the conflict between the medical profession and the Minister of Health when he spoke at the Royal Eye Hospital on June 9. "As a soldier," he said, "I watched the battle between the Minister of Health and the medical profession with immense interest. The Minister gave ground and made many concessions; the doctors dug themselves in and made very few, if any. Then suddenly common sense prevailed. I am delighted. We ought to congratulate both sides on a satisfactory ending to the conflict."

Dentists Say "No"

The council of the British Dental Association has decided not to recommend members to serve in the National Health Service. Its decision will be submitted to the Representative Board on June 20.

Hospital Funds for Research

Mr. F. Messer, M.P., chairman of the North-West Metropolitan Regional Hospital Board, said on June 8 that the Minister of Health would pool all existing hospital endowments and divide the money on a fifty-fifty basis between the Regional Board and its management committees, who would have to spend the money on research work.

Norwegian Award to British Doctor

A diploma of merit, signed by King Haakon, has been awarded to Percy Mitchell Scott, M.B., Ch.B., of Hull, for his medical work when attending the crews of Norwegian ships who came to the port during the war. Dr. Scott is official medical officer of the Norwegian Consulate.

Society of Medical Officers of Health of Eire

The following officers of the Society of Medical Officers of Health of Eire have been elected for the ensuing year: *President*, Dr. M. A. O'Farrell; *Vice-Presidents*, Dr. J. A. Craig and Dr. G. P. McCarthy; *Honorary Secretary*, Dr. W. McCarthy; *Honorary Treasurer*, Dr. J. A. Dunlevy.

Closing of Members' Common Room

For the purposes of repair and redecoration the Members' Common Room at British Medical Association House will be closed from Monday, June 21, to Saturday, July 3. During that period the usual luncheon facilities will not be available.

Foreign Members of the Royal Society

At a meeting of the Royal Society held on May 27 the following were elected Foreign Members of the Society: Dr. Detlev Wulf Bronk (Philadelphia), Foreign Secretary of the National Academy of Sciences of the U.S.A., and Chairman of the National Research Council, distinguished for his contributions to the development of biophysics and for his investigations in the field of neurophysiology, and Prof. Maurice Jules Gaston Corneille Caullery (Paris), Professor in the Faculty of Biological Science, Paris University, distinguished for his outstanding contributions to the comparative study of parasitology and to our knowledge of the growth and reproduction of invertebrate animals.

Film on Poliomyelitis

The film referred to in the annotation at page 1193 will be available in sizes of 35 mm. and 16 mm. from the Central Film Library, Imperial Institute, London, S.W.7, and also from the Mobile Film Units of the Central Office of Information from about June 22. Anyone applying for the film, which will be free of charge, should state the audience to which the film is to be shown. The responsibility of those wanting to show the film is to provide a suitable hall and to secure an adequate audience, for which purpose posters are available. The film on poliomyelitis, of which a preview was held last week, is the successor to the short film made for the Ministry of Health last year. The present one lasts 60 minutes, and those responsible for making it deserve the highest praise. It is alive and human and gives clinical information in a way no textbook can. If we are unfortunate enough to have a repetition of the poliomyelitis epidemic of 1947 this film should prove of the highest value for general practitioners and others concerned in the diagnosis and management of this disease.

Wills

Dr. Gordon Thomas Calthrop, formerly radiologist to the Radium Institute and the Royal Free Hospital, left £8,052. Dr. Charles Joseph Kirk, of Darlington, left £4,586; Dr. Robert Moorhead Beatty, of Heckmondwike, £1,803; and Dr. George Gordon, formerly D.C.M.S., Ministry of Pensions, £507.

COMING EVENTS

The Art of Medical Illustration

An exhibition of technical and other medical paintings by Anna Zinkeisen will be held in the West Hall of the Royal Society of Medicine, 1, Wimpole Street, London, W., from Monday, June 21, to Saturday, July 3 (daily, 10 a.m. to 8 p.m.; Saturdays, 10 a.m. to 5 p.m.). The exhibition will be opened by the President of the Society, Sir Maurice Cassidy, on June 21, at 11 a.m. All those interested in the subject will be welcome.

Faculty of Homoeopathy

The annual assembly of the Faculty of Homoeopathy will be held at the London Homoeopathic Hospital, Great Ormond Street, London, W.C., on Wednesday, June 23, at 5 p.m., when there will be a general discussion of the National Health Service Act as it affects homoeopathic practice.

S.E. Metropolitan Regional Specialists Association

The first annual general meeting of this association will take place at B.M.A. House, Tavistock Square, at 5.0 p.m. on June 25. The B.M.A. has asked the council of this association to consider acting on its behalf in the area of the S.E. Metropolitan Regional Hospital Board, and this proposal will be discussed at the meeting. A cordial invitation is extended to all members of the specialist and consultant staffs of hospitals, including tuberculosis dispensaries.

National Association of Insurance Committees

The final meeting of the National Association of Insurance Committees will be held in the Spanish Hall, Winter Gardens, Blackpool, on Thursday, June 24, at 10.30 a.m.

Institute of Laryngology and Otology

Dr. Arthur Proetz, of St. Louis, U.S.A., will deliver a lecture on "Medical and Surgical Treatment in Relation to the Physiology of the Nose" at the Institute of Laryngology and Otology, 330–2, Gray's Inn Road, London, W.C., on Monday, June 28, at 5.30 p.m. Questions and a discussion will follow. Admission is by invitation, which may be obtained from the secretary of the institute.

Conference on Maternity and Child Welfare

The annual conference on Maternity and Child Welfare, arranged by the National Association of Maternity and Child Welfare Centres and for the Prevention of Infant Mortality will be held at Friends House, Euston Road, London, N.W., on Wednesday, Thursday, and Friday, June 23, 24, and 25, under the presidency of the Rt. Hon. Aneurin Bevan, P.C., M.P. (Minister of Health). The conference will be opened at 10.15 a.m. on June 23 by Dr. Jane H. Turnbull, chairman of the Association, and Mr. John Edwards, M.P., Parliamentary Secretary to the Ministry of Health. At 11 a.m. Mr. S. F. Wilkinson (Ministry of Health) and Dr. J. A. Scott (London County Council) will speak on "The National Health Service Act as it Affects Young Children," and a discussion will follow. On June 24, at 10.15 a.m., Dr. J. L. Burn (medical officer of health and school medical officer for Salford) and Miss Mary Smith (Manchester) will open a discussion on "Home, School, and Other Environmental Factors." On June 25, at 10.15 a.m., Mr. John Ross (Assistant Under-Secretary of State in charge of Children's Department, Home Office) and a Children's Officer will speak on "The Children Bill," and a discussion will follow. At 2.15 p.m. the Minister of Health will deliver his presidential address. The conference is open to all who are interested in maternity and child welfare, whether representatives of local authorities or voluntary organizations, or as individuals. Tickets for the three days are £1 1s.; for one day or one session, 10s. 6d. A remittance should accompany all applications and should be sent to Miss M. R. Lovelock, secretary of the Association, 5, Tavistock Place, London, W.C.1.

University of Durham: Department of Surgery

Mr. R. Guy Pulvertaft will deliver a lecture in the Royal Victoria Infirmary, Newcastle-upon-Tyne, on Friday, June 25, at 5 p.m., on "Tendon Surgery in the Hand."

Genetics of Cancer

A symposium on the genetics of cancer, organized by the Genetical Society of Great Britain (Lister Institute, Chelsea Bridge Road, London, S.W.1) and the British Empire Cancer Campaign (11, Grosvenor Crescent, London, S.W.1) will be held in London on June 24 and 25. The programme is as follows: June 24, 10 a.m., at Royal Society of Medicine, 1, Wimpole Street, W., "Inheritance of Cancer in Animals"; June 24, 2.30 p.m., at Medical Society of London, 11, Chandos Street, W., "Virus and Carcinogen Induced Mutations." June 25, 10 a.m., at Royal Society of Medicine, "Virus and Carcinogen Induced Mutations" (continued) and "Inheritance of Cancer in Animals" (continued); June 25, 2.30 p.m., at Royal Society of Medicine, "Inheritance of Cancer in Man." A number of American, European, and British scientists will read papers. The meetings are open to all interested in the subject. An informal dinner will be held on Thursday, June 24, at 7 for 7.30 p.m., at Brown's Hotel, Albemarle Street, London, W. Morning dress will be worn. Accommodation is limited to 70.

Tuberculosis Association Annual Conference

The annual conference of the Tuberculosis Association will be held at Queen's University, Belfast, on Wednesday, Thursday, Friday, and Saturday, June 30, July 1, 2, and 3. The programme is as follows: June 30, 2.30 p.m., Dr. Brice R. Clarke (Belfast), "The Northern Ireland Tuberculosis Service"; Prof. Arvid Wallgren (Stockholm), "The Time Table of Tuberculosis"; Dr. Dorothy S. Price (Dublin), "B.C.G. Vaccination of Infants." 8.30 p.m., annual general meeting; Dr. Robert Marshall (Belfast), "There Were Giants on the Earth in Those Days." July 1, 9.30 a.m., Prof. Jorgen Lehmann (Gothenburg), "P.A.S. in Pulmonary Tuberculosis"; Dr. T. G. Dempsey (London), "P.A.S. in Tuberculous Empyema"; Dr. A. F. Foster Carter (Frimley Sanatorium), "The Segments of the Lungs"; Dr. Dillwyn M. E. Thomas (Sully Hospital), "The Treatment of Pulmonary Tuberculosis in Relation to the Segments of the Lungs." 2.30 p.m., Mr. J. H. Carver (London), "Silent Renal Tuberculosis"; Dr. Johann Gravesen (Copenhagen), "Combination of Reduced Apical Thoracoplasty and Extrapleural Pneumo- or Oleothorax." 8.30 p.m., reception and entertainment arranged by the Lord Major of Belfast. July 2, 9.30 a.m., Dr. Joseph Smart (London) and Mr. W. P. Cleland (Epsom), "Primary Thoracoplasty"; Dr. James A. D. Deeny (Dublin), "The Epidemiology of Tuberculosis." 2.30 p.m., Dr. Johannes Holm (Copenhagen), "Refined Methods of Search for Tubercle Bacilli"; Dr. J. E. Wolf (Davos), "Some Observations on the use of Streptomycin in Tuberculosis." 7.30 p.m., annual dinner at Grand Central Hotel. July 3, Excursion and golf competition for the Fowler Cup. Information concerning accommodation in Belfast during the period of the meeting may be obtained from Dr. J. E. Geddes, 151, Great Charles Street, Birmingham, 3.

Training as Health Visitor Tutors

A special whole-time course of training for health visitor tutors will be started towards the end of September for a limited number of students. The course will cover a period of not less than three terms in one academic year and be followed by an examination and the award of diplomas to successful candidates. Health visitors with a minimum of three years' experience in health visiting are eligible for this course. Successful applicants will receive an allowance of £150 towards the cost of maintenance, together with the payment of their training and examination fees and the cost of textbooks. They will be required to sign an undertaking that if they pass the examination they will serve as health visitor tutors for at least two years. Application should be made immediately, and in any event not later than July 2, to the Secretary, the Ministry of Health, Division 3c, Whitehall, S.W.1.

SOCIETIES AND LECTURES

Tuesday

EDINBURGH POSTGRADUATE BOARD FOR MEDICINE.—At Edinburgh Royal Infirmary, June 22, 5 p.m. *"Clinical Problems of Poliomyelitis,"* by Prof. R. E. Tunbridge.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—June 22, 5 p.m. *"Toxic Eruptions, including the Erythemata,"* by Dr. J. E. M. Wigley.

Thursday

MEDICO-LEGAL SOCIETY.—At 26, Portland Place, London, W., June 24, 8 p.m. Annual general meeting. Paper: *"Rex v. Camb,"* by Geoffrey Dorling Roberts, K.C.

Friday

KENT AND CANTERBURY HOSPITAL, Canterbury.—June 25, 5 p.m. Monthly Clinical Meeting.

Saturday

ROYAL SANITARY INSTITUTE.—At Greenesfield Health Centre, Mulgrave Terrace, Gateshead, June 26, 10 a.m. Gateshead sessional meeting. *"The Stigma—A Problem of Social Medicine,"* by Drs. James Grant and C. B. Bamford.

APPOINTMENTS

Arthur Espie Porritt, C.B.E., M.Ch., F.R.C.S., and Henry Osmond Clarke, C.B.E., F.R.C.S., have been appointed to the Civil Consulting Staff of King Edward VII Convalescent Home for Officers at Osborne, Isle of Wight, in succession to Sir Claude Howard Stanley Frankau, C.B.E., D.S.O., M.S., F.R.C.S., and Walter Rowley Bristow, F.R.C.S., deceased, respectively.

Dr. Kathleen B. Cobb has been awarded a Fellowship in Paediatric Psychiatry at the Colorado Psychopathic Hospital (University of Colorado), Denver, Colorado, U.S.A., for the year beginning July 1, 1948.

The Council of the Senate of the University of Cambridge has appointed Richard Edward Montagu Pilcher, M.B., B.Chir., F.R.C.S.Ed., to be Governor of the Boston Grammar School until May 7, 1951.

Mr. Pilcher was educated at the University of Cambridge and at St. Thomas's Hospital. He is Honorary Surgeon to Boston Hospital and to Spalding Hospital; Consulting Surgeon to the Holland County Council's Maternity and Public Assistance Department; Consulting Obstetrician to the Lindsey County Council; Surgeon to the Holland County Emergency Hospital; and Orthopaedic Surgeon to the Holland County Council and to the Borough of Boston.

J. W. D. Bull, M.D., M.R.C.P., D.M.R., Honorary Assistant Radiologist, National Hospital, Queen Square, London, W.C.

After graduating with second-class honours in the Natural Sciences Tripos at Cambridge in 1932, Dr. Bull qualified by L.M.S.S.A. in 1934, took his M.B. in 1936 and the M.R.C.P. in 1937. He took the D.M.R. of London University in 1938 and in the same year was appointed to a Rockefeller Travelling Foundation Fellowship. In 1947 he proceeded M.D. Dr. Bull has written on radiological diagnosis of chronic subdural haematoma and the diagnosis and treatment of intracranial tumours.

Zina E. Moncrieff, M.B., Ch.B., M.R.C.P., D.C.H., Honorary Assistant Physician to Children's Department, Royal Free Hospital, Gray's Inn Road, London, W.C.

Dr. Moncrieff qualified at Aberdeen in 1938, took the Diploma of Child Health in 1942, and the M.R.C.P. in 1944. She has written on the diagnosis and treatment of thyroid dysfunction in children.

Dr. James Charles Sleigh has been appointed Divisional Medical Officer for the St. Albans Division (comprising St. Albans City, Harpenden Urban, St. Albans Rural, and Elstree Rural Districts) under the Herts County Council's Health Service scheme and Medical Officer of Health for St. Albans City, St. Albans Rural, and Harpenden Urban Councils.

Dr. Sleigh graduated M.B., Ch.B. at the University of Aberdeen in 1918 and took the D.P.H. in 1931. He is at present Medical Officer of Health and School Medical Officer for Chatham. He has long been interested in aviation, holding a private pilot's licence, and is an examiner for the Royal Aero Club "A" licence. From 1945 to 1946 he served in the R.A.M.C. in Germany with the rank of lieutenant-colonel.

DRUMMOND, J. S., M.B., Ch.B., D.P.H., Medical Officer of Health, Mansfield.

EEDY, B. N., M.B., B.Ch., D.P.H., Joint Medical Officer, Warsop and Mansfield Woodhouse Urban Districts and Assistant to County Medical Officer of Nottinghamshire.

HART, E. W., M.B.E., M.D., M.R.C.P., Honorary Paediatrician, Hampstead General and North-west London Hospital, Haverstock Hill, N.W.

LANCASHIRE COUNTY COUNCIL.—The following have been appointed Divisional Medical Officers under the N.H.S. for the districts indicated in parentheses: G. H. Potter, M.B., Ch.B., D.P.H. (Abram, Ashton-in-Makerfield, Aspull, Billinge and Winstanley, Hindley, Ince, Orrell, Standish, Upholland, and Wigan Rural); A. C. Crawford, M.B., Ch.B., D.P.H. (Golborne, Haydock, Newton-le-Willows, etc.); J. S. Sewell, M.D., D.P.H. (Blackrod, Horwich, Westhoughton, etc.); J. G. Hailwood, M.D., D.P.H. (Crosby, Formby, Litherland, Ormskirk, Skelmersdale, and West Lancashire Rural); G. G. Wray, M.D., D.P.H. (Chorley borough and rural, Adlington).

RUNWELL HOSPITAL, near Wickford, Essex.—*Assistant Physicians*, W. N. L. Haynes, M.R.C.S., L.R.C.P.; Norman A. Cohen, M.R.C.S., L.R.C.P.

SEMPLE, A. B., M.D., D.P.H., Deputy Medical Officer of Health, Liverpool.

ST. ANDREW'S HOSPITAL, Bow, London, E.—*Casualty Officer*, W. D. Smith, M.B., B.Ch. *House-physicians*, J. H. F. Wood, M.B., B.Ch.; and J. Zamler, M.R.C.S., L.R.C.P.

ST. THOMAS' HOSPITAL, London, S.E.—*Honorary Surgeon*, R. H. Boggon, M.S., F.R.C.S. *Honorary Surgeon in charge of Outpatients*, C. G. Rob, F.R.C.S. *Honorary Physician to Department of Psychological Medicine*, W. W. Sargant, M.R.C.P., D.P.M. *Honorary Physician to Out-patients*, H. J. Anderson, M.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Laidlow.—On June 6 1948, at Crown House, Retford, to Doreen, wife of Edwin V. Laidlow, M.B., B.S., a brother for Diana and David.

Laws.—On May 29, 1948, to Dr. Pamela Laws (née King), wife of Captain John W. Laws, R.A.M.C., of 3, Fowler's Hill, Salisbury, a son.

Malcomson.—On June 8, 1948, to Dr. Madeline, wife of Dr. E. W. Malcomson, Staunton-on-Wye, Hereford, a daughter—Rachel Jane.

Moselhi.—On June 3, 1948, at Carlisle, to Margaret Mary (née Carlyle), wife of Dr. A. Moselhi, a son—Morad, a brother for Magdah.

Pratt.—On May 4, 1948, at the Queen Elizabeth Hospital, Birmingham, to Dorothy (née Boothroyd), wife of Dr. Peter Pratt, a son—Christopher Peter.

Rayner.—On June 2, 1948, at Queen Elizabeth Hospital, Birmingham, to Dr. Mary M. Rayner (née Dale), wife of Lieutenant C. Stephen Rayner, R. Sigs., a son—Christopher Martin.

Turner.—On June 4, 1948, to Kathlyn (née McNeill), wife of Dr. Anthony C. Turner, of Broadway House, Herne Bay, Kent, a daughter—Elizabeth Anne Aldren, a sister for John.

MARRIAGES

Binning—Repard.—On May 27, 1948, at Hove, Dr. Rex Binning, of 18, Brunswick Square, Hove, only son of Mr. F. G. Binning and the late Mrs. Binning, of Southampton, to Nancy Louise, only daughter of Mr. and Mrs. A. Green, of Hove.

Watts—Lambert.—On June 5, 1948, at The Priory Church of St. Bartholomew the Great, London, Richard W. E. Watts, M.B., B.S., to Joan E. M. Lambert, M.R.C.S., L.R.C.P.

DEATHS

Bowie.—Recently, at Crawshaw Avenue, Pudsey, Yorks, Edgar Ormond Bowie, L.A.H., D.P.H.

Buckland.—On June 5, 1948, at the Dunedin Hospital, New Zealand, Henry Scott Buckland, M.B., B.Chir.

Campbell.—On June 1, 1948, at Johannesburg, South Africa, Andrew Campbell, M.B., F.R.C.S.Ed.

Clay.—On June 12, 1948, at 1, Athol Road, Whitstable, Kent, Francis Edmund Clay, M.R.C.S., L.R.C.P., aged 75.

Culmer.—On June 5, 1948, at Nassau, The Bahamas, Joseph William Culmer, M.R.C.S., L.R.C.P.

Dingley.—On June 7, 1948, at Longcroft House, Wednesbury, Staffs, Edward Alfred Dingley, M.D., J.P., aged 88.

Gossage.—On June 8, 1948, at Westminster Hospital, London, S.W., Alfred Milne Gossage, C.B.E., M.D., F.R.C.P., aged 85.

Hardie.—On June 3, 1948, William Towers Hardie, M.B., Ch.B.Glas., of 25, Second Avenue, Glasgow.

Hirsch.—On May 20, 1948, at Birmingham, Max Hirsch, M.D.Berlin, aged 71.

Hutcheson.—On June 11, 1948, at 2, Nile Grove, Edinburgh, James Ironside Hutcheson, M.B., Ch.B., D.P.H.

Jellett.—On June 8, 1948, at Christchurch, New Zealand, Henry Jellett, M.D., F.R.C.P.I.

Leask.—On June 7, 1948, at 9, High Street, Wick, Caithness-shire, James Leask, M.D.Aberd.

Llewellyn.—On June 10, 1948, John Llewellyn, M.R.C.S., of "Upwood," Susanwood, Chislehurst, Kent, aged 90.

Lloyd.—On June 11, 1948, at Roselyon, Mount Park, Harrow-on-the-Hill, William Lloyd, F.R.C.S.

McCann.—On June 11, 1948, Ivan Bailey McCann, M.R.C.S., L.R.C.P., aged 52.

McConnell.—On June 3, 1948, at 21, Percy Gardens, Tynemouth, James McConnell, M.B., B.S., D.P.H.

Tatchell.—On June 1, 1948, at the helm of his boat, off Cowes, Percy Tatchell, M.R.C.S., L.R.C.P., aged 74.

Walton.—On June 8, 1948, at 20, Devonshire Place, London, W., Harry Walton, M.R.C.S., L.R.C.P., aged 43.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Hypnosis in Labour

Q.—*What are the facts and arguments for and against hypnosis for procuring analgesia in childbirth?*

A.—According to J. B. DeLee in *The 1939 Year Book of Obstetrics and Gynaecology* (p. 164) sundry trials of hypnotism during labour have been made since the method was introduced into surgery in 1821. A recent report on 12 cases (with only one failure) is by W. S. Kroger and S. T. DeLee (*Amer. J. Obstet. Gynec.*, 1943, **46**, 655). These authors also review some of the earlier literature on the subject. The method has two main features: (1) hypnotic and (2) post-hypnotic suggestion—i.e., when the patient is in a trance it is suggested to her that labour will be painless. Repeated séances are given, beginning about the seventh month of pregnancy. During labour itself the patient is hypnotized early in the first stage. Many advantages are claimed: no interference with uterine function, smooth and rapid progress of labour with the patient calm and relaxed, a decreased tendency to haemorrhage and shock, relief of pain, and good amnesia. Indeed, hypnosis is said to be the only analgesic which is completely safe for both mother and child. Under its influence the patients continue to obey the instructions of the attendant and "bear down" or "relax" accordingly. They can also take nourishment and empty the bowel and bladder at will. Forceps delivery, episiotomy, and perineal repair can all be carried out without the aid of any other analgesic agents.

The disadvantages of the method include the practical difficulties inherent in devoting a very considerable amount of time and care to each individual patient. The same operator has to carry out the hypnotism on each occasion and to attend in labour. However, he or she need not remain in personal contact with the patient throughout the whole course of labour; once the patient is hypnotized "rapport" can be transferred to a nurse, whose instructions will then be followed by the patient. Probably the chief disadvantage of the method is that its success depends on having a confident and experienced operator working with a susceptible patient. Many women are not amenable. Even so, it seems likely that hypnosis in labour has a wider application than has been appreciated, and the practical difficulties may have been so overstated that it has not received a thorough trial. There is no doubt that it works well in some cases. In certain ways it can be regarded as an extension of the "suggestion" therapy which every good obstetrician practises, consciously or subconsciously, as part of antenatal care.

Vagotomy

Q.—*Is the operation of vagotomy for gastric or duodenal ulcer widely performed? In what type of case is it indicated or contraindicated? What is the prognosis, and what are the end-results?*

A.—Vagotomy has been widely practised in America for at least five years, and its use here has been and still is steadily increasing, especially in the last year or so. Indications in this country have been confined almost entirely to two groups of cases: (1) selected duodenal ulcers, and (2) gastro-jejunal ulcers following either short-circuiting operations or gastrectomy. In group 1 the ulcers which respond best are those occurring in young men whose ulcers have failed to respond to extensive medical treatment, where obstructive symptoms are absent or minimal, and where a psychosomatic factor is in evidence. In group 2 vagotomy is probably the treatment of choice, but the possibility that stenosis may follow the ulcer's healing must be borne in mind. Vagotomy is not advocated for gastric ulcer, as it leaves the question of possible malignancy unsolved. This obviously applies in greater degree to the older age groups. The immediate prognosis (provided the nerve section is adequate) is excellent. Follow-up studies are as yet too brief

to merit an opinion on long-term results, but interim results (up to five years) show 75–80% completely satisfactory results and another 10–15% greatly improved.

Acne Vulgaris

Q.—*What is the modern theory of the aetiology of acne vulgaris? What success has there been with oestrogens, and what is the rationale of treatment with these hormones and their limits and dangers? The case I have in mind is that of a man of 28 who has suffered from acne vulgaris for 14 years, chiefly about the chin and forehead. His general health is good except for a mild chronic bronchitis and post-pharyngeal catarrh. He has had sulphur lotions, x rays, ung. quinolor, dieting, vitamin A, internal mercury, and ultra-violet rays. Nothing has been of any use except the x rays, which cleared the condition up for eight months, leaving a small area of alopecia on the chin. A second dose of x rays twelve months later had exactly the same effect. Focal sepsis has been removed and a diet poor in fats recommended.*

A.—Acne vulgaris is a normal accompaniment of puberty related to the influence of endocrine development upon the activity of sebaceous glands. Similar changes are sometimes seen in infants, possibly consequent upon hormonal influences from the mother. A related affection may accompany disease of the central nervous system, probably the hypothalamus, as is seen in post-encephalitic Parkinsonism. There is often a strong hereditary and familial factor, which in some cases amounts to a gross naevoid abnormality (acne conglobata) and is not responsive to any treatment other than surgical. In the ordinary case of pubertal acne there may be a wide range of aggravating factors—psychological, dietetic, focal, sepsis—which may demand chief attention in treatment. Local treatment, including the use of modern degreasing agents, is always important, but each case is an individual problem.

The case described suggests the possibility of rosacea rather than acne, or perhaps the combination. The chronic bronchitis and catarrh suggest, on the one hand, sepsis about accessory sinuses, which would provoke acne or rosacea. On the other hand, it may relate to a catarrhal diathesis likely to be helped by a diet rich in proteins and vitamin B, and restricted in carbohydrates, fluids, and salt. Oestrogens should not be employed in the female unless there is an indication in menstrual irregularities. In the male they are harmless and worth trying in moderate dosage for a period, but results are not very encouraging. There is no doubt of the effect of a large dosage in many cases of acne, but such dosage cannot be regarded as safe or wise. A small dose of stilboestrol will often help in rosacea.

Adiposity in Childhood

Q.—*A woman has had a large abdomen and pendulous breasts since her youth; all kinds of treatment had no effect. Can anything be done to prevent her children, aged 7 and 5, from developing the same condition? They are already showing signs of adiposity—protruding abdomen, and, in the elder girl, developing breasts. They are healthy and normal otherwise, and do not overeat.*

A.—A tendency to the condition described is determined genetically and cannot be avoided; nor, unfortunately, is there any endocrine hormone which fundamentally changes this innate endocrine constitution. Postural exercises will minimize the accompanying lordosis, which is part of the clinical syndrome; dieting is of limited value.

Effect of Oestradiol Benzoate in the Elderly

Q.—*Could you tell me the effect of doses of oestradiol benzoate by injection on a woman of 70? I have taken these at intervals since 1924, and they have kept me far younger than my years; now I have been told that they may cause an ovarian growth.*

A.—The action of oestrogens on the ovary is a depressant one and there is no reason to fear that they will cause an ovarian growth. Apart from effects on general metabolism and other endocrine glands their action is on the secondary sex organs, stimulating the Fallopian tubes, uterus, vagina, vulva, and breasts. The effects vary with the dose, but there is a risk of endometrial hyperplasia and uterine haemorrhage and possibly of carcinoma of the uterus, although this latter is not proved. They might also stimulate the glandular tissue of the breast to unnatural activity. Although in some cases no harm may result or be apparent, it is generally believed to be unwise to continue oestrogen therapy for long periods after the menopause. One of the disadvantages is that chronic oestrogen therapy makes the patient tolerant to it, and it is then difficult to discontinue it without precipitating severe menopausal symptoms. It is, moreover, doubtful whether any preservation of youth, except in respect of preventing atrophy of the secondary sex organs, can be ascribed to oestrogen therapy.

Multiple Boils

Q.—*Does penicillin predispose to recurrence? What is the chance of breeding a strain resistant to penicillin in a case of recurrent boils? A male patient, aged 63, has had multiple boils for 18 months, due to Staph. aureus. He has had three courses of penicillin by injection, which temporarily cleared the boils; but they returned a few weeks after each course in spite of sterilizing all clothing. He is now having a course of autogenous vaccine, and the boils have developed again, also one large carbuncle, a month after beginning the course. What further treatment can be given?*

A.—Penicillin certainly does not predispose to recurrence; on the other hand, penicillin treatment often breeds a resistant strain, which will remain insusceptible to further treatment. A further culture should be made and the present susceptibility of the staphylococcus to penicillin tested. Such a history as this in an elderly patient suggests an underlying cause of diminished resistance to infection, which may have to be dealt with before more specific treatment can succeed.

Penicillin for Vincent's Angina

Q.—*Is there any treatment for severe Vincent's angina besides penicillin and local applications such as chromic acid? Is penicillin more effective in the form of a lozenge or given systemically?*

A.—Before the introduction of penicillin it was usual to treat Vincent's angina with neoarsphenamine, of which even one injection of 0.45 g. was often followed by rapid recovery. In any case in which penicillin is proving ineffective arsenicals should be tried. It has been the general experience that penicillin is the most effective treatment for this infection. In patients in whom angina is the salient feature parenteral administration of 15,000 to 20,000 units every three hours is probably best. Local applications of penicillin solution in concentrations of 500 to 1,000 units per ml. four times daily will also lead to healing of the ulcers. Pastilles or penicillin chewing-gum are most useful where gingivitis is the main disability. The time taken for healing varies from one to ten days, depending on the severity of the infection.

NOTES AND COMMENTS

Mumps at 80.—Dr. L. G. JACOB (Bracknell, Berks) writes: This week I was called by a woman to see her mother, as it was thought that she had mumps. The diagnosis was correct, but I found the patient, quite cheerfully, doing the family washing. Her age is 80.

Disclaimer.—The Medical Committee of the Charterhouse Rheumatism Clinic, London, wish to dissociate themselves from the recent statements appearing in the Press in connexion with a visit to the Clinic by the Duchess of Gloucester. There is no foundation for statements suggesting knowledge of a potential new drug for the treatment of chronic rheumatic diseases, nor is any such preparation under investigation at the present time.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology, Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads, Westcent, London.*

MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association. TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra, Westcent, London.*

B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.